



Department of Planning, Housing and
Infrastructure

REVIEW OF ENVIRONMENTAL FACTORS

Proposed Mitigation Works – Wilsons Beach, Abrahams Bosom
Reserve, Currarong

FINAL

January 2024

Note: If the proposed activity relates to land subject to a native title claim or determination, or an indigenous land use agreement seek advice from the native title team or legal branch before proceeding.

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1.0 Introduction

1.1 Purpose

This Review of Environmental Factors (REF) has been prepared to assess mitigation works that are proposed to be undertaken at Wilsons Beach, within Abrahams Bosom Reserve, Currawong, NSW. The REF has been prepared to take into account to the fullest extent possible all factors affecting or likely to affect the environment by reason of the proposed activity defined in Section 2.1 of this report.

The REF has been prepared subject to Division 5.1 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) and Division 1 of Part 8 of the *Environmental Planning and Assessment Regulation 2021* (NSW) (EP&A Regulation), taking into account the Planning Secretary's *Guidelines for Division 5.1 Assessments* and the process specified.

To inform the REF, an Aboriginal Cultural Heritage Assessment Report (ACHAR) and an Archaeological Report (AR) have been prepared by Apex Archaeology Pty Ltd [Apex] (Apex 2023a, 2023b), these presented in Appendix 1 and 2. In addition, flora and fauna surveys have been conducted within, and in proximity to, the likely disturbance footprint.

This REF has adequately assessed the environmental factors in the context of the activity's likelihood to significantly affect:

- the environment, justifying that an Environmental Impact Statement (EIS) is not required for the purposes of s.5.7 of the EP&A Act.
- threatened entities, justifying that a Species Impact Statement (SIS) or Biodiversity Development Assessment Report (BDAR) is not required for the purposes of Part 7 of the NSW *Biodiversity Conservation Act 2016* (BC ACT) or Part 7A of the NSW *Fisheries Management Act 1994* (FM Act).
- Matters of National Environmental Significance, justifying that a referral to the Commonwealth Minister for the Environment is not required for the purposes of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

1.2 Proponent

For this proposed activity, the Department of Planning, Housing and Infrastructure (DPHI) – Crown Lands is the proponent and Lesryk Environmental Pty Ltd (Lesryk) has prepared the REF on behalf of DPHI – Crown Lands, a Determining Authority under Division 1 of Part 5 of the EP&A Act.

Name	Michael Murphy
Position	Senior Project Officer
Organisation	Department of Planning, Housing and Infrastructure – Crown Lands
ACN/ABN	N/A
Office and postal address	6 Stewart Avenue, Newcastle West NSW 2302
Email	Michael.murphy@crowmland.nsw.gov.au
Phone	0436 650 493

1.2.1 Principal project contact

Name	Michael Murphy
Position	Senior Project Officer Assets – Built Assets
Organisation	Department of Planning, Housing and Infrastructure – Crown Lands
Office address	6 Stewart Avenue, Newcastle West NSW 2302
Postal address	PO Box 2185, Dangar NSW 2309
Phone number	0436 650 493
Email	Michael.murphy@crownland.nsw.gov.au
Emergency contact details	0436 650 493

1.2.2 Consultant

Company	Lesryk Environmental Pty Ltd.
ACN/ABN	ABN: 79169230175
Contact	Derek Engel
Address	PO Box 3001, Bundeena NSW 2230
Phone number	0408 258 129
Email	admin@lesryk.com.au
Secondary contact	deryke@lesryk.com.au
Role	Director

1.3 Project locality

Location	Wilson's Beach – Figure 1
Address	Abrahams Bosom Reserve, Currarong NSW
Lot/DP	Lot 7004 DP1030104
Crown land details	As detailed above. Native title claims: South Coast People (Tribunal No NC2017/003).
Local Government Area	Shoalhaven Local Government Area (LGA)

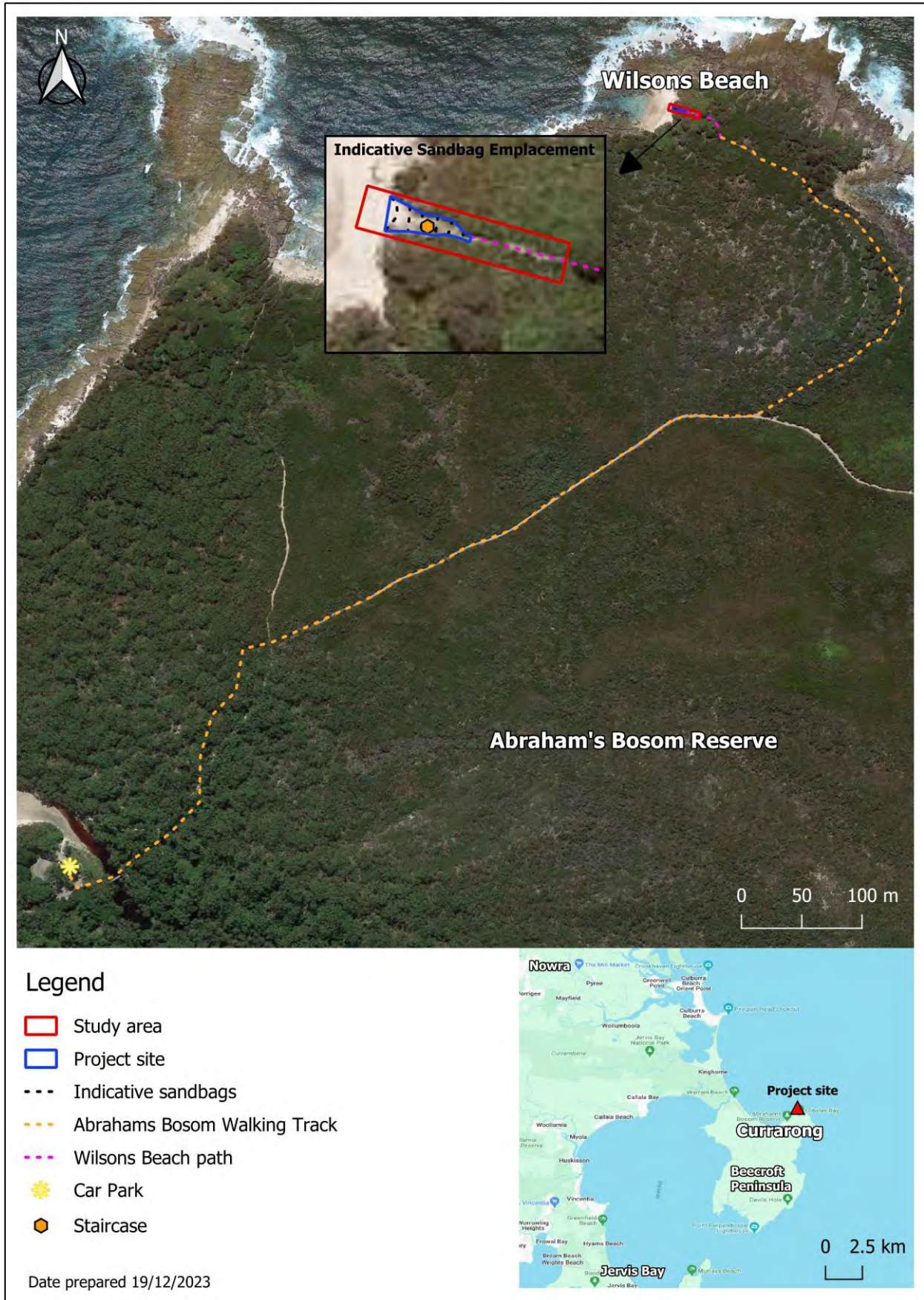


Figure 1 Locality diagram

2.0 Description of the Proposed Activity

2.1 The Proposed Activity

Due to impacts associated with channelised surface runoff during heavy rainfall periods, to address pedestrian safety, Crown Lands is proposing to upgrade the northern end of the Wilsons Beach (Figure 1). In addition, as the erosion is continuing to expose and erode a registered Aboriginal site (AHIMS #58-2-0054), Crown Lands proposes to implement measures to protect this site.

Key features of the proposed activity include the following:

- the project area; which is approximately 20 metres (m) x 5 m in size and comprises the northern point of the Abrahams Bosom Walking Track as well as the disturbance footprint
- the study area; which includes the area around the existing metal staircase and the Aboriginal shell midden
 - to protect the midden, Crown Lands proposes to lay down geofabric textile (or similar) material with fill (likely clean sand) placed over the top.
- temporarily fenced site compound located in the car park at the entrance to Abrahams Bosom
- site access for personnel to the project area from the carpark
- use of a helicopter to deliver materials to site
- removal of the existing metal staircase, this consisting of 6 stairs and associated poles that are attached to sandstone boulders. The staircase will be cut it into manageable pieces with an angle grinder and transported offsite by hand

The proposed activity would allow for safe access to Wilsons Beach by pedestrians, whilst protecting the Aboriginal shell midden from further harm.

2.2 Capital investment

Capital cost of the Activity* ~ \$30,000

*Publication of the REF is required for proposals with a capital investment value >\$5 million under s.171(4)(a) of the Environmental Planning and Assessment Regulation 2021.

2.3 Construction hours

Works' hours would be in accordance with the Environment Protection Authorities (EPA) Draft Construction Noise Guideline (EPA 2020), being:

- 7:00 am – 6:00 pm Monday to Friday
- 8:00 am – 1:00 pm Saturday
- No work on Sunday or public holidays.

2.4 Construction activities

Based on a worst-case estimate, the proposed activities would have a maximum disturbance footprint of about 0.024 ha with an adopted buffer of about 3 m.

2.4.1.1 Proposed construction methods

Site set up

1. Set up of a site compound, where material will be stored, in existing hardstand areas (i.e. car park).
2. Installation of temporary barricades/fencing to delineate the work areas, including the site compound, and signage as required, these being kept in place for the duration of the work period.
3. Installation of temporary erosion and sediment controls identified within the Erosion and Sediment Control Plan (ESCP); these to be monitored and maintained for the duration of the work period (particularly after periods of heavy rainfall).
4. Installation and maintenance of environmental mitigation measures identified in the REF.
5. Delivery of materials by hand from the site compound or with a helicopter from the helicopter loading zone to site.

Construction work

6. Angle grinding the steel staircase into carryable pieces.
7. Placing the sandbags onto a geofabric layer over the access track.

Post construction work

8. Site to be cleared and returned to pre-work condition (i.e., removal of waste/spoil).

2.4.1.2 Sustainability measures

The proposed activity would be carried out during daylight hours, thereby negating the need for any lighting.

All vehicles, machinery and appliances used would be serviced and maintained to ensure efficient operation and energy usage.

2.4.1.3 Earthworks or site clearing including extent of vegetation to be removed

The proposal would not require excavation to permit the placement of the geotextile fabric beneath the sandbags. Minor earthworks would be associated with the removal of the steel staircase. These activities would be undertaken in accordance with the Construction Environmental Management Plan (CEMP) developed for the project site.

No native vegetation clearing, including mature trees, would be required to permit the work within the assessed area.

An Erosion Sediment Control Plan (ESCP) would be developed to limit soil erosion and sediment transfer off-site.

Sediment fencing/structures would be used around areas of excavation and earthworks. Stockpiles, where needed, will be treated in accordance with Landcom (2004) 'Soils and Construction: Managing Urban Stormwater' (the 'Blue Book').

No significant site disturbance is expected.

2.5 Construction equipment and materials

The following equipment and machinery will be required to achieve the proposed activity:

- angle grinder
- sandbags
- helicopter or skid steer
- hand tools
- generator
- site dumper(s)
- water cart (700 litre trailer with pump) for dust suppression
- 4WD ute(s)
- various delivery vehicles for materials.

2.6 Ancillary facilities

The proposal is anticipated to require ancillary facilities in the form of site compound areas; namely, the establishment of a temporary stockpile area to be located within an existing hardstand area, this being the car park at the entrance of Abrahams Bosom.

The access tracks will be utilised by personnel to reach the site on foot, however, the materials required to achieve the objectives of the proposed activities will be delivered to site by helicopter. Therefore, limited impacts to the access track are anticipated.

The following environmental factors have been considered when selecting stockpile areas for the temporary storage of materials:

- In areas that do not require the clearing of native vegetation beyond that already required for the proposed activity
- On relatively level ground and land that has already been disturbed.
- Allowing for mitigation measures, such as bunting, sand bags or coir logs, to negate impacts on nearby waterways.

2.7 Public utility adjustment

No works that would affect public utility, such as the disturbance of underground cables, will be undertaken.

2.8 Property acquisition

No property acquisition will be necessary for the proposed activity.

2.9 Proposed date of commencement and duration

The proposed activity is expected to commence 7 May 2024, and estimated to take 4 weeks to complete. This timeframe is indicative only and subject to change.

2.10 Operation and maintenance requirements

The work will be undertaken in accordance with Coastal Crown Land Guidelines (NSW DPE 2023). The proposed activity aligns with the land management principle 3.1 as 'low impact or non-structural measures that restore or enhance natural defences' by remediating the erosion hazards present.

3.0 Objectives, needs and alternatives of the activity

3.1 Strategic needs

The strategic need for the proposed activity would be to preserve cultural heritage values for future generations whilst addressing public safety. Additionally, the proposal aims to conserve the natural and recreational values of the locality.

The strategic planning for the proposal is outlined in Section 4 of this REF.

3.2 Operational needs

The project site contains a registered Aboriginal site (AHIMS #58-2-0054) and Wilsons Beach access track has experienced erosion and degradation due to heavy rainfall events, natural wind and wave damage, and pedestrian activity over time. The objective of the proposal is to address these issues by removing the redundant steel staircase and implementing the proposed activities. This involves placing sandbags atop geotextile fabric to mitigate further erosion and enhance site stability.

3.3 Objectives of the Activity

The objective and reasons of the proposed activity is to:

- Address the erosion of the existing beach track thereby providing an improved, compliant, and desirable level of infrastructure and service, better accommodating current and future visitor expectations
- Improve pedestrian safety
- Protect the exposed Aboriginal shell midden from further degradation due to surface runoff
- Conserve natural, cultural heritage and recreational values of the locality.

3.4 Alternatives and preferred options

3.4.1 Alternative 1 - 'Do nothing'

The do-nothing option would mean retaining the site in its current condition, with continued damage occurring from pedestrian activity and natural water and wind erosion. The advantage of this option would be that no short-term impacts to cultural heritage would occur. However, this option is considered unreasonable as it would not meet the proposal objectives; being to preserve cultural heritage for future generations, remediate the erosion hazard currently present and facilitate safer beach access for pedestrians.

3.4.2 Alternative 2 – Additional Archaeological Investigation

Undertaking additional archaeological investigations would allow for better understanding of the potential Aboriginal shell midden and the extent of the deposit. This would encompass conducting invasive excavations of the subsurface, which is considered unnecessary as remediation would be concentrated in the impacted area. Furthermore, this alternative would provide a sample of what lies beneath the surface, but is not likely to detect cultural remains; which may be at risk of being inadvertently disturbed. This option is not considered to be suitable as additional investigations would not remediate the issues the site, which is assessed as having low archaeological significance (Apex 2023a), is currently facing; and therefore, does not meet the objectives of the proposal.

3.4.3 Alternative 3 – Realignment of existing track

The realignment of the northern end of the walking track was considered to mitigate pedestrian impact on the site while addressing existing erosional impacts. In this scenario, the primary objective is to reroute the walking track away from the midden and the currently degraded sections, thereby safeguarding the integrity of the cultural heritage site.

Whilst this alternative would assist in protecting the midden and permit the management of the eroded section of the track to occur, this option is not considered viable given the extent of vegetation clearing required and the potential for unrecorded archaeological deposits to be present which may be impacted.

3.4.4 Alternative 4 – Preferred Option: Remediation

The preferred option, being the proposed remediation works, would see no further archaeological investigations occurring. The ACHAR prepared by Apex (Apex 2023a) has deemed the site as having limited scientific significance; and therefore, an additional investigation is unlikely to provide further information on historical Aboriginal occupation of the area. This is considered to be the most appropriate option as the objectives of the proposal would be achieved with the least amount of additional impact to the archaeological resource.

4.0 Statutory and planning framework

This section outlines the statutory and planning framework for the proposed activity. It considers the provisions of relevant legislation and statutory instruments, including state environmental planning policies (SEPPs) and local environmental plans (LEPs).

4.1 Environmental Planning and Assessment Act 1979

This REF has been prepared in accordance with Division 5.1 of Part 5 of the EP&A Act and Division 1 of Part 8 of the EP&A Regulation. It describes the potential impacts of the proposed activity and considers whether it will likely significantly impact the environment. This analysis is relevant to determining whether further assessment of the proposed activity needs to be undertaken, including an Environmental Impact Statement in accordance with section 5.7 of the EP&A Act.

Under Cl.5.5(1) of the EP&A Act, NSW Department of Planning, Housing and Infrastructure – Crown Lands (as the determining authority) is required to ‘examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity’ in order to assess applications for approval of the proposed activity of which they are the determining authority.

Clause 171(2) of the EP&A Regulations 2021 sets out 18 factors that need to be considered when assessing environmental impact under Part 5 of the EP&A Act. These factors are addressed in s.7.1 of the REF.

This REF complies with the requirement for public authorities to assess the impact of an activity under Part 5 of the EP&A Act.

4.1.1 Strategic plans

The proposal is located within the Six Cities Region as defined under s.3.1 Division 3.1 of the EP&A Act (within the meaning of the *Greater Cities Commission Act 2022*). The Illawarra-Shoalhaven City (being one of the six) is comprised of land within four LGAs, including the City of Shoalhaven LGA as relevant to the proposal.

Strategic plan	Application	Compliant
Shoalhaven 2023 Community Strategic Plan (SCC 2022)	<p>Eleven Key Priorities are identified within the Plan. The proposal – to permit track repairs, including the remediation of an exposed Aboriginal shell midden – is consistent with Key Priority 1.2 under the theme ‘Resilient, safe, Accessible & Inclusive Communities’ to <i>Preserve, support and develop cultural and creative vitality across our communities.</i></p> <p>While none of the remaining Key Priorities are applicable to the scope of work proposed, the proposal is not considered to be inconsistent with the Plan.</p>	Yes
Shoalhaven 2040: Our Strategic Land-use Planning Statement (SCC 2020)	<p>Two Directions – ‘Managing Economic Growth’ and ‘Natural and Built Environments and Lifestyles’ – support and underpin the identified Vision for Shoalhaven. Sixteen Planning Priorities sit under these directions, with 37 potential Actions (or tasks) under these.</p> <p>The proposal – to permit track repairs, including the remediation of an exposed Aboriginal shell midden – is consistent with Planning Priority 15: <i>Scenic and cultural landscapes, Collaboration Activity 15.1: Work with Aboriginal communities, Local Aboriginal Land Councils and Heritage NSW to identify Aboriginal cultural heritage and cultural landscapes, including opportunities to share them where appropriate, and Action 15.1: Consider, where appropriate, the identification of scenic and landscape values and the development of appropriate controls to protect and enhance identified values.</i></p>	Yes

Strategic plan	Application	Compliant
	While none of the remaining Planning Priorities are applicable to the scope of work proposed, the proposal is not considered to be inconsistent with the Plan's vision and objectives.	
Illawarra Shoalhaven Regional Plan 2041 (DPHI 2021)	<p>Thirty objectives have been identified to achieve the vision that in 2041 the Illawarra Shoalhaven is a diverse, creative and globally connected region with a reputation for innovation, sustainability and resilience. To implement the objectives, actions, strategies and collaboration activities have been identified.</p> <p>The proposal – to permit track repairs, including the remediation of an exposed Aboriginal shell midden – is consistent with Objective 23: <i>Celebrate, conserve and reuse cultural heritage</i> and Strategy 23.1 to identify, conserve and enhance cultural heritage values.</p> <p>While none of the remaining objectives are applicable to the scope of work proposed, the proposal is not considered to be inconsistent with the Plan's vision and objectives.</p>	Yes

4.1.2 State Environmental Planning Policies

If relevant, provide details

Reference	Assessment	Outcome	Compliant
SEPP (Biodiversity and Conservation) 2021	Chapter 4 of this SEPP requires consideration of whether a proposal will affect Core Koala habitat as defined in the SEPP. If so, a plan of management for the Koala must be prepared in accordance with Part 4.3 of the SEPP.	The study area is not considered to constitute core koala habitat, nor will it have any adverse impact on this species (if present).	Yes

Reference	Assessment	Outcome	Compliant
	Chapter 2 'Vegetation in non-rural areas' does not apply to the City of Shoalhaven LGA, and with reference to Chapter 6 of the SEPP, the proposal is not located within a regulated catchment (i.e., Sydney's Drinking Water).	Refer to s.6.6.1.6 of the REF for further details.	
SEPP (Resilience and Hazards) 2021	<p>The management objectives of Chapter 2 Coastal management of the RHSEPP include:</p> <ul style="list-style-type: none"> (a) managing development in the coastal zone and protecting the environmental assets of the coast, (b) establishing a framework for land use planning to guide decision-making in the coastal zone, and (c) mapping the 4 coastal management areas which comprise the NSW coastal zone, in accordance with the definitions in the <i>Coastal Management Act 2016</i>. <p>Division 1 Coastal wetlands and littoral rainforest area, Division 2 Coastal vulnerability area, Division 3 Coastal environment area and Division 4 Coastal use area requires consideration of whether a proposal on land that is within/in proximity to these four coastal management areas is likely to cause an adverse impact.</p> <p>Section 2.10 'Development on land within the coastal environment area' of the RHSEPP requires:</p>	<p>The RHSEPP applies to the study area as the proposal is located on land mapped as Coastal environment and use areas.</p> <p>Refer to s.6.16.1 of the REF for further details. The proposed activity is not considered to contravene the objectives of the RHSEPP.</p>	Yes

Reference	Assessment	Outcome	Compliant
	<p>1) Development consent must not be granted to development on land that is within the coastal environment area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following –</p> <ul style="list-style-type: none"> a) the integrity and resilience of the biophysical, hydrological (surface and groundwater) and ecological environment, b) coastal environmental values and natural coastal processes, c) the water quality of the marine estate (within the meaning of the <i>Marine Estate Management Act 2014</i>), in particular, the cumulative impacts of the proposed development on any of the sensitive coastal lakes identified in Schedule 1, d) marine vegetation, native vegetation and fauna and their habitats, undeveloped headlands and rock platforms, e) existing public open space and safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability, f) Aboriginal cultural heritage, practices and places, 		

Reference	Assessment	Outcome	Compliant
	<p>g) the use of the surf zone.</p> <p>2) Development consent must not be granted to development on land to which this section applies unless the consent authority is satisfied that—</p> <p>a) the development is designed, sited and will be managed to avoid an adverse impact referred to in subsection (1), or</p> <p>b) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or</p> <p>c) if that impact cannot be minimised—the development will be managed to mitigate that impact.</p> <p>Section 2.11 ‘Development on land within the coastal use area’ of the RHSEPP requires:</p> <p>1) Development consent must not be granted to development on land that is within the coastal use area unless the consent authority—</p> <p>a) has considered whether the proposed development is likely to cause an adverse impact on the following—</p> <p>i. existing, safe access to and along the foreshore, beach, headland or rock platform for members of</p>		

Reference	Assessment	Outcome	Compliant
	<p>the public, including persons with a disability,</p> <ul style="list-style-type: none"> ii. overshadowing, wind funnelling and the loss of views from public places to foreshores, iii. the visual amenity and scenic qualities of the coast, including coastal headlands, iv. Aboriginal cultural heritage, practices and places, v. Cultural and built environmental heritage. <p>b) is satisfied that –</p> <ul style="list-style-type: none"> i. the development is designed, sited and will be managed to void an adverse impact referred to in paragraph (a) or, ii. if that impact cannot be reasonably avoided – the development is designed, sites and will be managed to minimise that impact or, iii. if that impact cannot be minimised – the development will be managed to mitigate that impact, and 		

Reference	Assessment	Outcome	Compliant
	<p>c) has taken into account the surrounding coastal and built environment, and the bulk, scale and size of the proposed development.</p>		
SEPP (Resources and Energy) 2021	<p>Reference to the NSW Planning Portal Spatial Viewer (NSW Government 2023) identified the proposal on land mapped as a Coal Seam Gas Exclusion zone. The proposal does not involve coal seam gas development; therefore, this SEPP is not applicable to the proposal.</p>	N/A	N/A
SEPP (Transport and Infrastructure) 2021	<p>The proposal is development permitted without consent under s.2.133 of the TISEPP—</p> <ol style="list-style-type: none"> 1) Development for the purpose of soil conservation works may be carried out by or on behalf of a public authority without consent on any land. 2) A reference in this section to development for the purpose of soil conservation works includes a reference to development for any of the following purposes if the development is in connection with soil conservation works— <ol style="list-style-type: none"> (a) construction works, (b) routine maintenance works, (c) emergency works, including works associated with landslides, (d) environmental management works. 	<p>The proposal – to permit track repairs, including the remediation of an exposed Aboriginal shell midden – is considered to be in accordance with s.2.133 of the TISEPP.</p>	Yes

4.1.3 Local environmental plans

The proposed activity is located on land zoned C1 (National Parks and Nature Reserves) under the Shoalhaven Local Environmental Plan 2014. In respect of the SLEP, on land zoned C1, development is permitted without consent for uses authorised under the NPW Act. However, the proposed activity is authorised to be carried out as development without consent under the provisions of s.2.133 of the TISEPP, which prevails over the SLEP as provided by s.3.28 of the EP&A Act.

Accordingly, the proposed activity is an ‘activity’ defined in section 5.1 of the EP&A Act.

Referencing s.6.8 of the REF, the study area is located within the curtilage of ‘Wreck of the “Merimbula”’, an item (Item #19) of local significance identified under Schedule 5, Part 1 Heritage items, of the SLEP. In accordance with cl.5.10(3) ‘Heritage conservation’ of the SLEP, Crown Lands is both the proponent and consent authority for the development and, in accordance within cl.5.10(4), must consider the effect of the proposed development on the heritage significance of the item concerned. The proposal is located about 350 m east of the Wreck of the “Merimbula” and is within a previously disturbed area. As such, the proposal is considered low adverse with respect to, and is unlikely to affect, the heritage values of the Wreck of the “Merimbula”. Ultimately, the proposal is addressing current adverse environmental impact, permitting safe and continued appreciation, enjoyment and preserving of the natural, cultural heritage and recreation values of the area.

4.2 Statutory guidelines, standards and codes

The following guidelines, standards or codes are related to the proposed activity.

Document	Justification	Compliant
Coastal Crown Land Guidelines (DPE 2023)	These guidelines apply generally to the administration of Crown land under the <i>Crown Land Management Act 2016</i> (the Crown Land Management Act) within the meaning of section 5 of the <i>Coastal Management Act 2016</i> (the Coastal Management Act).	Yes
Managing Urban Stormwater: Soils and Construction [the ‘Blue Book’] (Landcom 2004)	The proposed activity must be carried out in accordance with all relevant requirements of the Blue Book.	Yes
Matters of Environmental Significance [MNES] – Significant Impact Guidelines (DE 2013)	To assess the impacts of the proposal on the identified MNES listed under the EPBC Act, the Significant Impact Guidelines have been drawn upon. These Guidelines are used to determine whether there is likely to be a significant impact on these MNES and, as such, whether the conducting of the proposed activity will require referral of the matter as a controlled action to the Federal Minister for the Environment for further consideration or approval.	Yes

Policy and guidelines for fish habitat conservation and management (DPI 2013)	The proposal is located adjacent to the Jervis Bay Marine Park, and is located on land mapped as Key Fish Habitat. Refer to s.4.4 and s.6.4.1 for further details.	Yes
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4.3 Agency policy

No further identified Crown Land policy to those mentioned in Section 4.2 is applicable in carrying out the proposal.

4.4 Other relevant legislation

Table 1 consists of other consents, permits or licences required to be obtained under other relevant legislation before carrying out the proposed activity.

Table 1 Applicable legislation

NSW Legislation	Comments	Applicable	Permissible
<i>Aboriginal Land Rights Act 1983</i>	<p>As part of the ACHAR prepared by Apex (2023a), an online search of the National Native Title Tribunal (NNTT) identified a Native Title Application over the study area on behalf of the South Coast People (Tribunal No NC2017/003). The application has been accepted for registration but not yet determined.</p> <p>The Proponent notified the Native Title Corp via email for 28-day notification. No feedback was received by December 8 2023.</p> <p>Further communications entered into with Aboriginal people and organisations is provided within the ACHAR (Appendix 1).</p>	✓	✓
<i>Biodiversity Conservation Act 2016</i>	<ul style="list-style-type: none"> • The Biodiversity Offset Scheme (BOS) applies to activities assessed under Part 5 where: <ul style="list-style-type: none"> ○ it is likely to significantly affect threatened species, ecological communities or their habitats according to the Test of Significance; or ○ the determining authority chooses to assess their impact on threatened biodiversity in this way. • The Assessments of significance conducted on the recorded White-bellied Sea-Eagle (<i>Haliaeetus leucogaster</i>) (listed as Vulnerable under this Act), Sooty Oystercatcher (<i>Haematopus fuliginosus</i>) (Vulnerable) and Eastern Bristlebird (<i>Dasyornis brachypterus brachypterus</i>) (Endangered) determined that the proposal will not have a 	✓	✓

NSW Legislation	Comments	Applicable	Permissible
	<p>significant impact on these threatened species (Appendix 3).</p> <ul style="list-style-type: none"> • The activity will not result in a significant impact to biodiversity values (as defined in s.1.5 of that Act). • The activity will not result in any serious, adverse or irreversible impacts to biodiversity (nature) values. <p>The BOS was not triggered and therefore the BAM was not applied.</p>		
<i>Biosecurity Act 2015</i>	<p>Part 3, Clause 22 of this Act states ‘any person who deals with biosecurity matter or a carrier and who knows, or ought reasonably to know, the biosecurity risk posed or likely to be posed by the biosecurity matter, carrier or dealing has a biosecurity duty to ensure that, so far as is reasonably practicable, the biosecurity risk is prevented, eliminated or minimised’.</p> <p>This includes pest animal and plants species as defined under Clause 15 of the Act and anything declared by the regulations to be a pest for the purposes of this Act.</p>	✓	✓
<i>Coastal Management Act 2016</i>	<p>The CM Act establishes the framework and overarching objects for coastal management in NSW. The objects of the CM Act are broadly to manage the coastal environment of NSW consistently with the principles of ecologically sustainable development for the social, cultural and economic wellbeing of the people of NSW.</p> <p>With reference to the <i>Crown Land Management Act 2016</i> (see section below), s.1.3(c) of the Act aligns with the following CM Act objects:</p>	✓	✓

NSW Legislation	Comments	Applicable	Permissible
	<p>(a) to protect and enhance natural coastal processes and coastal environmental values including natural character, scenic value, biological diversity and ecosystem integrity and resilience, and</p> <p>(b) to support the social and cultural values of the coastal zone and maintain public access, amenity, use and safety, and</p> <p>(d) to recognise the coastal zone as a vital economic zone and to support sustainable coastal economies, and</p> <p>(e) to facilitate ecologically sustainable development in the coastal zone and promote sustainable land use planning decision-making, and</p> <p>(f) to mitigate current and future risks from coastal hazards, taking into account the effects of climate change, and</p> <p>(g) to recognise that the local and regional scale effects of coastal processes, and the inherently ambulatory and dynamic nature of the shoreline, may result in the loss of coastal land to the sea (including estuaries and other arms of the sea), and to manage coastal use and development accordingly, and</p> <p>Object in s.1.3(d) of the CLM Act aligns with the following CM Act objects:</p>		

NSW Legislation	Comments	Applicable	Permissible
	<p>(h) to promote integrated and co-ordinated coastal planning, management and reporting, and</p> <p>(j) to ensure co-ordination of the policies and activities of government and public authorities relating to the coastal zone and to facilitate the proper integration of their management activities, and</p> <p>(k) to support public participation in coastal management and planning and greater public awareness, education and understanding of coastal processes and management actions, and</p> <p>Object in s.1.3 (e) of the CLM Act aligns with the following CM Act object:</p> <ul style="list-style-type: none"> • to acknowledge Aboriginal peoples' spiritual, social, customary and economic use of the coastal zone 		

<p>Crown Land Management Act 2016</p>	<p>The activity is present on land administered under the CLM Act.</p> <p>The six objects of s.3.1.3 of the Act are—</p> <ul style="list-style-type: none"> (a) to provide for the ownership, use and management of the Crown land of New South Wales, and (b) to provide clarity concerning the law applicable to Crown land, and (c) to require environmental, social, cultural heritage and economic considerations to be taken into account in decision-making about Crown land, and (d) to provide for the consistent, efficient, fair and transparent management of Crown land for the benefit of the people of New South Wales, and (e) to facilitate the use of Crown land by the Aboriginal people of New South Wales because of the spiritual, social, cultural and economic importance of land to Aboriginal people and, where appropriate, to enable the co-management of dedicated or reserved Crown land, and (f) to provide for the management of Crown land having regard to the principles of Crown land management. <p>The six identified principles of s.1.4 of the Act are—</p> <ul style="list-style-type: none"> (a) that environmental protection principles be observed in relation to the management and administration of Crown land, and 	<p>✓</p>	<p>✓</p>
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NSW Legislation	Comments	Applicable	Permissible
	<p>(b) that the natural resources of Crown land (including water, soil, flora, fauna and scenic quality) be conserved wherever possible, and</p> <p>(c) that public use and enjoyment of appropriate Crown land be encouraged, and</p> <p>(d) that, where appropriate, multiple use of Crown land be encouraged, and</p> <p>(e) that, where appropriate, Crown land should be used and managed in such a way that both the land and its resources are sustained in perpetuity</p> <p>(f) that Crown land be occupied, used, sold, leased, licensed or otherwise dealt with in the best interests of the State consistent with the above principles</p> <p>The conducting of the proposed activity assessed in this REF, being to permit remediation of an exposed Aboriginal shell midden, while conserving environmental values (i.e., natural, cultural and social), complies with these objectives and principles.</p> <p>With reference to State Strategic Plan – A vision for Crown Land (NSW Government 2020), Section 3.3 Priorities for Crown Land, the proposed activity is consistent with the outcome to “support and restore environmental values on Crown land” in support of the four identified priorities of the Plan.</p> <p>In regard to other outcomes, the proposal is not considered to be inconsistent with the Plan’s vision.</p>		

NSW Legislation	Comments	Applicable	Permissible
<p><i>Fisheries Management Act 1994</i></p>	<p>The object of this Act is to conserve, develop and share the fishery resources of the state for the benefit of present and future generations. In particular, the Act aims to:</p> <ul style="list-style-type: none"> (a) conserve fish stocks and key fish habitats (b) conserve threatened species, populations and ecological communities of fish and marine vegetation (c) promote ecologically sustainable development, including the conservation of biological diversity. <p>The proposal is located on land mapped as Key Fish Habitat (KFH). One of the objectives of the FM Act is to '... conserve key fish habitats...'. While the term 'key fish habitat' is not defined within the FM Act, DPI has identified KFH to include all marine and estuarine habitats up to highest astronomical tide level (that reached by 'king' tides) and most permanent and semipermanent freshwater habitats including rivers, creeks, lakes, lagoons, billabongs, weir pools and impoundments up to the top of the bank.</p> <p>As the proposal does not conform to 'Dredging and reclamation' under Part 7 Division 3 of the FM Act, nor involves harm to marine vegetation or obstruction of fish passage, approval and/or permits from the DPI in</p>	<p>✓</p>	<p>✓</p>

NSW Legislation	Comments	Applicable	Permissible
	<p>accordance with s.199, s.205 and s.219 of the Act, respectively, is not required.</p> <p>Given the extent of work proposed and the absence of any permanent aquatic habitats proximate to the subject site, legislative consideration of Section 221ZV (Part 7A) of the FM Act, in regard to the impact of the works on any State listed threatened fish, is not necessary.</p>		
Heritage Act 1977	<p>Section 6.8 of the REF, referencing the desktop search of relevant heritage databases, did not identify any heritage listing on the State Heritage Register (SHR) or as a Historic Heritage Information Management System (HHIMS) under s.170 of this Act, within, or near to, the study area.</p> <p>The proposed activity is located within the footprint of previously disturbed/modified areas and, as such, no unexpected non-Aboriginal cultural heritage items are anticipated.</p> <p>No exemptions or permits under s.57 or s.60 of this Act are required.</p> <p>It is acknowledged that the Wreck of the “Merimbula” is present about 350 m west of the study area, the works proposed not having an impact on this heritage item, or its curtilage.</p>	✓	✓
Local Land Services Act 2013	<p>The objects of this Act are as follows—</p> <p>(a) to establish a statutory corporation (to be known as Local Land Services) with responsibility for</p>	x	N/A

NSW Legislation	Comments	Applicable	Permissible
	<p>management and delivery of local land services in the social, economic and environmental interests of the State in accordance with any State priorities for local land services,</p> <p>(b) to establish a governance framework to provide for the proper and efficient management and delivery of local land services,</p> <p>(c) to establish local boards for the purpose of devolving management and planning functions to regional levels to facilitate targeted local delivery of programs and services to meet community, client and customer needs,</p> <p>(d) to require decisions taken at a regional level to take account of State priorities for local land services,</p> <p>(e) to ensure the proper management of natural resources in the social, economic and environmental interests of the State, consistently with the principles of ecologically sustainable development (described in section 6 (2) of the <i>Protection of the Environment Administration Act 1991</i>),</p> <p>(f) to apply sound scientific knowledge to achieve a fully functioning and productive landscape,</p> <p>(g) to encourage collaboration and shared responsibility by involving communities, industries and non-government organisations in making the best use of local knowledge and expertise in relation to the provision of local land services,</p>		

NSW Legislation	Comments	Applicable	Permissible
	<p>(h) to establish mechanisms for the charging of rates, levies and contributions on landholders and fees for services,</p> <p>(i) to provide a framework for financial assistance and incentives to landholders, including, but not limited to, incentives that promote land and biodiversity conservation.</p>		
Marine Estate Management Act 2014	<p>This Act provides for the management of the marine estate of NSW consistent with the principles of Ecologically Sustainable Development (ESD) (refer to Appendix 4).</p> <p>Pursuant to Part 5 of the Act, and referencing s.6.16.1 of the REF, the proposal is located adjacent to Jervis Bay Marine Park, and a Habitat Protection Zone; however, as the proposal is terrestrial, it does not involve any of the identified activities allowed, prohibited or, pursuant to s.57 of the Act, requiring a Marine Parks permit.</p>	✓	✓
National Parks and Wildlife Act 1974	<p>The proposed activity is designed and sited to conserve nature and objects, places or features (including biological diversity) of cultural value within the landscape, and is therefore consistent with objects of the Act under s.2A(1)(a) and (b).</p> <p>Pursuant to s.2A(2) of the Act, the objects of the Act are to be achieved by applying the principles of ESD (Appendix 4) (as described in s.6(2) of the <i>Protection of the Environment Administration Act 1991</i>).</p>	✓	✓

NSW Legislation	Comments	Applicable	Permissible
	Apex has prepared a ACHAR for the proposal (Appendix 1). Refer to s.6.7 of the REF for details.		
<i>Protection of the Environment Administration Act 1991</i>	<p>Section 6(2) of the PoEA Act requires compliance with the following four principles of ESD, where an activity affects the environment.</p> <ol style="list-style-type: none"> 1. The precautionary principle: For example, if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. 2. Inter-generational equity: The present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations. 3. Conservation of biological diversity and ecological integrity should be a fundamental consideration of the decision to undertake the activity. 4. Improved valuation, pricing and incentive mechanisms: For example, the users of goods and services should pay prices that include the use of natural resources and assets and the ultimate disposal of any waste generated by the provision of that good or service, and those environmental goals, having been established, should be pursued in the most cost-effective way. 	✓	✓

NSW Legislation	Comments	Applicable	Permissible
	Appendix 4 outlines how the principles of ESD have been applied to the proposal.		
<i>Protection of the Environment Operations Act 1997</i>	<p>In accordance with Part 3.2 ‘Licences required for scheduled development work and scheduled activities’, the proposed activity is not an activity identified under Schedule 1 of the Act. An environmental protection licence from the NSW Environmental Protection Authority is not required.</p> <p>Part 5.3, s.120 of the Act, stipulates a person who pollutes any waters is guilty of an offence. Provided the mitigation measures recommended within the REF are implemented, the proposed activity is not anticipated to result in the pollution of nearby waters, nor is an approval or permit required under s.122 of the Act.</p>	✓	✓

Commonwealth legislation	Comments	Applicable	Permissible
<i>Environmental Protection Biodiversity Conservation Act 1999</i>	<p>By completion of the investigation, the following threatened fauna listed under this Act were located on or in the vicinity of the site:</p> <ul style="list-style-type: none"> • White-bellied Sea-eagle (<i>Haliaeetus leucogaster</i>) – listed as Marine. • Eastern Bristlebird (southern subspecies) (<i>Dasyornis brachypterus brachypterus</i>) – Listed as endangered. <p>No TECs or threatened plants were recorded.</p> <p>Assessments referencing the EPBC Significant Impact Guidelines were undertaken on the Eastern Bristlebird,</p>	✓	✓

	<p>these concluding that this species nor its habitat would not be adversely affected.</p> <p>As the proposed work is not located within the Commonwealth marine area, this being from 3 to 200 nautical miles from the coast, no assessment referencing the EPBC Significant Impact Guidelines for the White-bellied Sea-eagle is considered necessary.</p>		
Native Title Act 1993	<p>As part of the ACHAR provided by Apex (2023a), an online search of the NNTT identified a Native Title Application over the study area on behalf of the South Coast People (Tribunal No NC2017/003). The application has been accepted for registration but not yet determined. Correspondence conducted with Aboriginal people and organisations is provided within the ACHAR (Appendix 1).</p> <p>Referencing the <u>Native Title Vision</u> identifies that the study area is not subject to an Indigenous land use agreement.</p> <p>The proposed activity is valid for the purposes of the Act, and is considered a low-level “future act” under 24LA of the Act.</p>	✓	✓

5.0 Notification and consultation

5.1 Statutory notification

5.1.1 Native Title

Native Title status	Future Act pathway	Notification requirement	Notification response
Registered claim (no ILUA*) - on behalf of the South Coast People (Tribunal No NC2017/003).	The proposed activity is valid for the purposes of the Act, and is considered a low-level “future act” under 24LA of the Act.	The works will not require prescribed notification under Part 2 Division 3 (Subdivision L), though consultation with native title holders/claimants (or their representatives) may still be required.	The Proponent notified the Native Title Corp via email for 28-day notification. No feedback was received by December 8 2023. Further correspondence conducted with Aboriginal people and organisations is provided within the ACHAR (Appendix 1).

*Indigenous Land Use Agreement

5.2 Community consultation

Consultation was undertaken by Apex as part of the ACHAR preparation (Apex 2023a).

5.3 Notification subject to a NSW Act

Table 4 lists the agency consultation requirements under the various Acts.

Table 2 Notification requirements

Agency	Section	Trigger	Outcomes	Compliant
Fisheries NSW <i>Under the Fisheries Management Act 1994</i>	s.37	Activity requires approval for research or other authorised purposes	Not applicable	N/A
	s.199	Activity requires dredging or reclamation of water lands	Not applicable	N/A
	s.205*	Activity requires harm to marine vegetation	Not applicable	N/A
	s.220ZW	Activity requires a licence to harm,	Not applicable	N/A

Agency	Section	Trigger	Outcomes	Compliant
		damage critical habitat, or habitat of a threatened entity.		
	s.220ZZ	Activity requiring a Species Impact Statement	Assessments of significance were undertaken and a Species Impact Statement was not considered necessary.	Yes
Heritage NSW*	s.57*	Controlled activity application <i>Under the Heritage Act</i>	Not applicable	N/A
	s.90*	Application for an Aboriginal Heritage Impact Permit (AHIP) <i>Under the National Parks and Wildlife Act 1974</i>	An AHIP will be acquired before the proposed activities begin.	Yes
Water NSW <i>Under the Water NSW Act 2014</i>	s.49(1)	Activity is to be undertaken under the <i>Crown Land Management Act 2016</i> within a Special Area requiring that notice be given to the Regulatory Authority	Not applicable	N/A
	s.50(1)	Activity is a function within a Special Area (declared catchments) undertaken by a Public Agency requiring that notice be given to the Regulatory Authority	Not applicable	N/A
	s.51 & s.55	Activity is regulated under <i>Water NSW Regulation 2020</i> , with Special and Controlled Areas requiring consent from Water NSW <i>Refer to Part 3 of the Regulation</i>	Not applicable	N/A
	s.64	Infrastructure activity within the Sydney Catchment Area requiring approval from	Not applicable	N/A

Agency	Section	Trigger	Outcomes	Compliant
		the Regulatory Authority		
Marine Estate Management Authority <i>Under the Marine Estate Management Act 2014</i>	s.57	Activity within, on or adjacent to a marine park or aquatic reserve requiring a permit Refer to Part 2 of the Regulation	The study area is adjacent to the Jervis Bay Marine Park. Reference to s.6.16.1 of the REF details that the study area is adjacent to a Habitat Protection Zone; however, as the proposal is terrestrial, it does not involve any of the identified activities allowed, prohibited or requiring a Marine Parks permit.	Yes
Place Management NSW		Foreshore area (of Sydney Harbour) <i>Under the Place Management Act 1998</i>	Not applicable	N/A
Environment Protection Authority	s.47-s.49*	Licensing of scheduled activities as listed in <u>Schedule 1</u> of the <i>Protection of Environment Operations Act 1997</i>	Not applicable	N/A
	s.120*	Regulation of water pollution as a non-scheduled activity.	Provided the mitigation measures recommended within the REF are implemented, the proposed activity is not anticipated to result in the pollution of nearby waters.	Yes

*Publication of the Review of Environmental Factors is required for proposals that trigger these statutory approval requirements under the *Environmental Planning and Assessment Regulation 2021*

5.4 Notification subject to SEPP requirements

Table 5 details any applicable council and agency consultation requirements under Division 1 of Part 2.2 of the T&I SEPP are required.

Table 3 SEPP notification requirements

Agency	Section	Trigger	Outcomes	Compliant
State Environmental Planning Policy (Transport and Infrastructure) 2021				
Local Council	s.2.10	Proposed activity will impact on infrastructure or services (such as	Not applicable	N/A

Agency	Section	Trigger	Outcomes	Compliant
<i>Where an activity is located on, adjoining or will burden public facilities administered by Council.</i>		stormwater, sewer, roads and footpaths)		
	s.2.11	Proposed activity will impact on heritage items listed under Schedule 5 of the LEP	The proposal is located within the curtilage of a heritage item listed on the SLEP. As the proposal is located within previously disturbed areas, it is considered low adverse with respect to, and is unlikely to affect, the heritage values of the Wreck of the “Merimbula”. Consultation with Council is not required as Crown Lands is the consent authority.	Yes
	s.2.12	Proposed activity will impact flood patterns on flood-labile land ¹	Not applicable	N/A
	s.2.14	Proposed activity is on land within the mapped coastal vulnerability area ² and is inconsistent with a certified coastal management program	No Coastal Vulnerability Area Map has yet been adopted by the RHSEPP; as such, no coastal vulnerability area has been identified.	N/A
State Emergency Service <i>Where the Activity is development on flood-labile land</i>	s.2.13	Proposed activity is a relevant provision under <ul style="list-style-type: none"> • Division 1 (Air transport facility), • Division 2 (Correctional centre or complex), • Division 6 (Emergency service facility or bushfire hazard reduction), • Division 10 (Health services facility), • Division 14 (Public administration building or building of the Crown), 	Not applicable	N/A

¹ **flood liable land** means land that is susceptible to flooding by the probable maximum flood event, identified in accordance with the principles set out in the manual entitled *Floodplain Development Manual: the management of flood liable land* published by the New South Wales Government and as in force from time to time

² **coastal vulnerability area** means the land identified by a State environmental planning policy to be the coastal vulnerability area for the purposes of the *Coastal Management Act 2016*, being land subject to coastal hazards.

Agency	Section	Trigger	Outcomes	Compliant
		<ul style="list-style-type: none"> • Division 15 (Railway), • Division 16 (Research and monitoring station), • Division 17 (Roads and traffic) • Division 20 (Stormwater management system) of the T&I SEPP		
National Parks and Wildlife Service	s.2.15 (2)(a)	Proposed activity is on lands reserved or acquired under the NPW Act	Not applicable	N/A
	s.2.15 (2)(b)	Proposed activity is on lands adjoining reserved or acquired land under the NPW Act	Not applicable	N/A
Transport for NS	s.2.15 (2)(c)	Proposed activity includes a fixed or floating structure in navigable waters	Not applicable	N/A
	Sch 3	A traffic-generating development affecting roads administered by TfNSW	Not applicable	N/A
Director of Observatory	s.2.15 (2)(d)	Proposed activity will increase the amount of artificial light in the dark night sky within 200 kilometres of the Siding Spring Observatory.	Not applicable	N/A
Secretary of the Commonwealth Department of Defence	s.2.15 (2)(e)	Where the activity is proposed on defence communications facility buffer land near Morundah.	Not applicable	N/A
Subsidence Advisory NSW	s.2.15 (2)(f)	Land in a mine subsidence district within the meaning of the <u>Coal Mine Subsidence Compensation Act 2017</u>	Not applicable	N/A
State Environmental Planning Policy (Biodiversity and Conservation) 2021				
Chapter 5 River Murray lands	s.5.10	Proposed activity is a listed circumstance in s5.12 of the SEPP, and notification of the	Not applicable	N/A

Agency	Section	Trigger	Outcomes	Compliant
		relevant authority is required.		

5.4.1 Public authority consultation feedback

Table 4 Feedback received

Public Authority	Comments received
Native Title Corp	The Proponent sent an email requesting feedback to the Native Title Corp. No feedback was received by December 8 th 2023, after a 28-day notification period.

6.0 Environmental assessment

6.1 Environmental factors

6.1.1 Existing environment

Locality

The proposed activity is located on Wilsons Beach which is situated about 1.5 kilometres (km) north of Currarong on the Beecroft Peninsula; forming part of the northern headland of Jervis Bay and within the Shoalhaven LGA (Figure 1). The beach is accessed via the Abrahams Bosom Walking Track from the carpark.

The locality is a popular destination for locals and tourists alike, and provides opportunities for many recreational activities; such as water sports, bird and whale watching, camping, picnicking and bushwalking.

Project site

The section of Abrahams Bosom Walking Track that leads on to Wilsons Beach where the proposed activity will be undertaken is approximately 20 m x 5 m in size; this currently comprising steel stairs and an exposed Aboriginal shell midden. This is situated atop outcropping sandstone within undulating low-lying sand dune covered in vegetation (Apex 2023a). The vegetation is characteristic of heathland and coastal sand dune species as well as several rainforest plants.

Hydrology

Whilst no creek or drainage lines are mapped within the study area, Abrahams Bosom Reserve contains Abrahams Bosom Creek which has a number of tributaries and drainage lines 900 m south of the study area (Figure 2). The creek is a second-order watercourse, and is not considered to be a reliable freshwater source (Apex 2023a).

Much of the study area has been minimally developed since the construction of the track along with the stairs currently present. Due to water runoff from Abrahams Reserve Creek and wind erosion, the sandstone has been degraded, and as a result, the shell midden impacted.

Sensitive receivers

A number of sensitive receivers (i.e., residences) are located 1.2 km southwest of the study area; most notably near the entrance of the Abrahams Bosom Walking Track, with the closest located about 60 m south of the walking track entrance (Figure 2).

Bushfire

Reference to the RFS Bush Fire Prone Land Map SEED dataset (State Government of NSW and NSW Rural Fire Service 2023) indicates that the study area is mapped as Vegetation Category 1. Vegetation Category 1 is considered to be the highest risk for bush fire. The proposed activity will not have an adverse impact on bushfire or bushfire management. No asset protection zones, including Vegetation Category 1 zones, will be affected in the long-term by the proposed activity. The proposed activity will not impede firefighter access or public evacuation operations.

The NPWS Fire History map (State Government of NSW and DPE 2010) indicates vegetation within the Abrahams Bosom Reserve, including the study area, has most recently been burnt by a wildfire in 1996-97.

Climate

According to monthly rainfall figures from the Bureau of Meteorology (BoM) for the Jervis Bay (Point Perpendicular Automatic Weather Station [AWS]) weather station (#068151), the mean annual rainfall experienced by the study region is about 1312.2 mm, with the greatest mean falls of 151.1 mm being encountered during the month of June (BoM 2023). January has the highest mean maximum summer temperature of 25.0°C, while July is the coldest month with a mean minimum of 16.1°C (BoM 2023).

Land use

The study area is mapped as C1 – National Parks and Nature Reserves within the Shoalhaven LEP (2014).

Appendix 5 provides a photographic record of the area assessed in this REF.



Figure 2 Waterways and Key Fish Habitat

6.1.2 Methodology

To achieve the objectives of the REF, and assess any archaeological and ecological impacts, the study area was traversed by foot on 16 November and 2 December 2023 by Lesryk and on 9 June 2023 by Apex. In conducting their inspection, Apex undertook this the company of the Registered Aboriginal Parties (RAPs) for the area.

In addition to the field surveys, a series of databases were consulted (Table 7). These databases were consulted to ensure that species and matters that have been recorded at other times of the year were considered and assessed if required.

Table 5: Databases consulted

Database/ Information sources	Date accessed	Search area
Protected Matters Search Tool (PMST) (DCCEEW 2023a)	October 2023	10 km buffer on study area
Register of critical habitat (DCCEEW 2023c)	November 2023	Study area
BioNet Atlas (NSW DCCEEW 2023a)	October 2023	10 km buffer on study area
Areas of Outstanding Biodiversity Value register (NSW DCCEEW 2023b)	October 2023	Study area
Fisheries NSW Spatial Data Portal (DPI 2023b)	December 2023	Southern Rivers
State Vegetation Type Map (NSW Government & DPE 2022)	November 2023	Study area
BioNet Vegetation Classification database (NSW Government 2023b)	December 2023	N/A
SEED map viewer (NSW Government 2023c)	November 2023	Study area
Groundwater Dependent Ecosystems Atlas (BoM 2023b)	October 2023	Study area
SEPP (Biodiversity and Conservation) 2021	December 2023	Study area
Aboriginal Heritage Information Management System (AHIMS) database	October 2023	Study area
Historical Heritage Information Management System (HHIMS) database	October 2023	Study area
Australian Heritage Database	November 2023	Study area
MinView (Regional NSW 2023)	December 2023	Study area
WeedWise (DPI 2023a)	December 2023	Shoalhaven LGA
Register of Native Title Claims (NNTT 2022b)	December 2023	Shoalhaven LGA
NSW Planning Portal Spatial Viewer (NSW Government 2023a)	December 2023	Wilsons Beach
NSW Bush Fire Prone Land (RFS 2023)	November 2023	Study area

6.1.3 Potential impacts

Specific potential impacts requiring consideration in regards to environmental factors identified above have been addressed within their relevant sub-sections of Section 6. The significance and extent of the impacts assessed in this REF are evaluated in Section 7.1. In summary, potential impacts will be localised and short-term/temporary during the construction phase and negligible thereafter. Provided recommended mitigation measures are adopted, the proposal is not considered to have a significant impact on the environment.

6.1.4 Mitigation measures

Environmental safeguards and mitigation measures are identified throughout Section 6 and in Section 8.1 of this REF. The following summarises the broad mitigation measures to be implemented for the proposal.

- Ecological assessments have been conducted in Appendix 3.
- No clearing of native vegetation/plants will be undertaken to permit the scope of work.
- Activities involving 'hot work' or requiring the use of an ignition source will cease during NSW RFS total fire bans.
- Removed non-seed-bearing exotic vegetation will be mulched or re-used on-site, while weed contaminated green waste and any surplus spoil and other materials will be disposed of appropriately at a licensed landfill facility.
- Vehicles transporting any exotic vegetation off site should ensure that their loads are covered.
- Any native species injured (as a result of the work) are to be cared for by a local wildlife carer/veterinarian.
 - Once rehabilitated, these native animals must be released at their point of capture.
- Any injured exotic species are to be taken to a local veterinarian for assessment.
- The proposed activity has the potential to introduce the pathogen *Phytophthora cinnamomi*, which is associated with the dieback of native plant species. Work must avoid the potential spread of this organism as far as possible by adhering to the following hygiene protocols:
 - Before entering and leaving the work site, personnel are to remove excess soil and mud and then spray boots, tools, gloves and small equipment with recommended disinfectant supplied by the contractor (70% Methylated spirits / 30% Water) until runoff is clear.
 - Avoid unnecessary soil disturbance.
- In relation to the remaining identified KTPs, these processes are extant along the investigated access track. The proposed activity is not expected to significantly contribute to, or increase the impact of, these KTPs.

6.2 Topography, geology and soil

6.2.1 Existing environment

Geology

The project area is underlain by the Snapper Point Formation; which is comprised of sandstone, conglomerate and minor siltstone from the Cisuralian period (290.1 – 283.5 Ma) (MinView 2023).

Soil

Due to a gap in the soil landscape mapping for the area, and no mapping provided by the 'Soil and Land information dataset' (SEED), it is not possible to name the official soil landscape that overlies the geology. However, Apex (Apex 2023a) notes that a review of the aerial imagery depicts the project area as a sandy beach which is 'fringed by a low-profile dune scape', with origins likely stemming from a combination of marine and aeolian sand deposits.

A soil technical report written by NSW Soil and Land Information System (1999) and represented on eSPADE v2.2 (NSW PIE, 2023) identified the soil in the Beecroft Peninsula as Rudosol soils. These are minimally developed soils that are known to occur along flood plains as young sedimentary deposits (AESE, 2020). The soil technical report notes that for soil Profile 37, surveyed on the Abrahams Bosom Walking Track, the substrate was sandstone-quartz, with a moderate erosion hazard and no salting evident.

Topography

The project area is located in a generally flat terrain at sea level. The topography of the area is characterized by a gentle slope and elevation about 0 to 10 m Australian Height Datum (AHD).

Acid sulfate soils

Reference to SEED Acid Sulfate Soil (ASS) mapping (State Government of NSW and DPE 2023a) identifies the project area as located within Class 5 land (Figure 3). Typically, ASS are not found in Class 5 land and as a result, the project will not actively disturb ASS.

Salinity

The proposed activity is not located in an area impacted by soil salinity as indicated on SEED Salinity Potential mapping (State Government of NSW and DPE 2017).

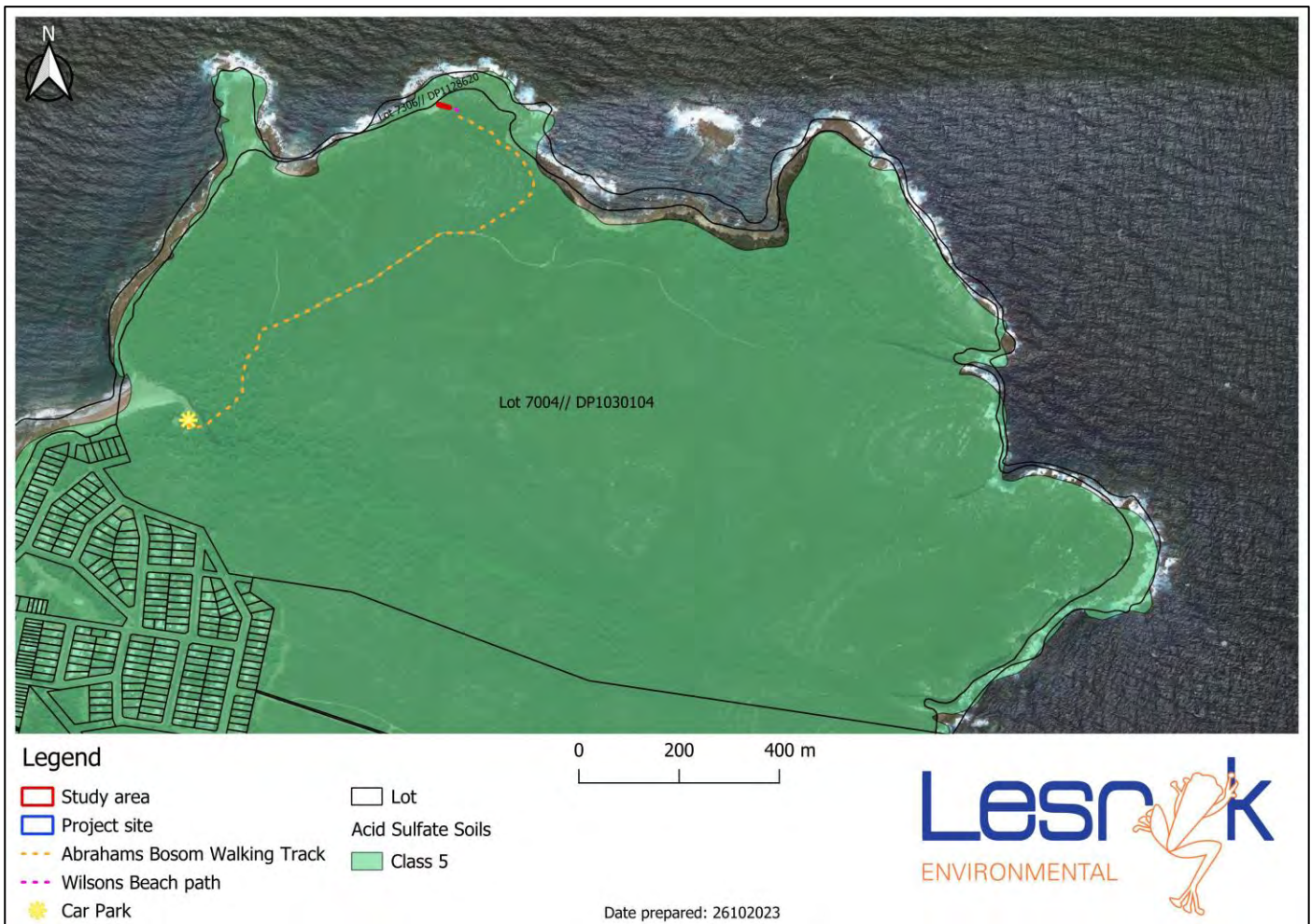


Figure 3 Acid sulfate soils (ASS)

6.2.2 Methodology

The proposed activity seeks to rehabilitate and remediate the current degraded condition of the existing beach track, this also causing the deterioration of a shell midden. The remediation will involve addressing the eroded condition of the existing track, this including construction of crossbank structures and importation of fill where needed. To protect the existing midden geofabric material, or similar, along with introduced sandbags containing fill, will be placed over this item. Additionally, the steel staircase that is present will be removed piece by piece with an angle grinder. This will involve minor soil disturbance. No excavation or native vegetation removal is required.

The predicted area of disturbance, based on a worst-case estimate, will be 0.024 ha.

6.2.3 Potential impact

The proposed remediation work will include some earthwork activities; namely the emplacement of sandbags on geotextile fabric for erosion control and the removal of the steel staircase. However, no significant ground disturbance will occur. If the works were to coincide with a wet weather event, erosion may occur where surface runoff is concentrated. In-situ material is expected to be utilised during the proposal.

The proposed activity is located on sandstone which has been severely eroded by wind and water. This will be remediated by depositing sandbags layers atop geofabric material. The result would be positive;

preserving the shell midden from further erosion hazards, and increasing land stability; thus, allowing the public to access Wilsons's Beach safely.

6.2.4 Mitigation measures

The mitigation measures for topography, geology and soil impacts that are proposed would include the implementation of an ESCP to be documented in the CEMP.

6.3 Contaminated land

6.3.1 Existing environment

The proposed activity will include minor earthwork activities through the emplacement of geotextile fabric and subsequent sandbags, as well as the removal of the steel staircase; however, no significant ground disturbance will occur. Ultimately, the activities proposed will increase land stability and protect against further erosion impacts.

With reference to the EPA Contaminated Land Record [search area Shoalhaven City Council LGA] (EPA 2023), the study area is not identified as supporting any land that is contaminated.

A review of the POEO Act public register for existing or former Environment Protection Licenses showed that there were no existing or former licenses issued for the proposal area or premises adjacent to the proposal area.

6.3.2 Methodology

The proposed activity is not likely to generate any contaminated waste materials (refer to section 6.3.1).

6.3.3 Potential impact

It is anticipated that, of the machinery/equipment employed during the proposed activity, there would be no requirement to refuel, or store substances, on-site. However, there remains the potential for accidental spills to occur (i.e. failure of hydraulic lines etc).

Minor exhaust emissions would result from the use of machinery, such as vehicles, during the course of the work. These emissions would be minimal and only for the duration of the project (i.e. short-term).

Beyond existing levels of disturbance, the proposed activity is not considered to have any adverse impact on the proximate waterbodies.

6.3.4 Mitigation measures

The mitigation measures for contaminated land impacts that are proposed to be implemented as part of the proposed activity are as follows:

- Construction works be undertaken in accordance with a CEMP.
- Should associated machinery/ equipment require re-fuelling, this would occur within a bunded area at a minimum 50 m from any waterbody or drainage line.
- Vehicles will be serviced and operate within standard TfNSW guidelines.

- Machinery will be serviced, regularly maintained and operated within current guidelines.
- Work is to be conducted during those periods when high winds are not predicted.
- Where possible, construction wastes will be recycled or reused.
- Other waste will be disposed to authorised waste facilities.
- A terrestrial spill kit must be maintained on site at all times. The type and nature of the kit must be commensurate to the type and quantity of any hazardous material used on site.

6.4 Water quality and hydrology

6.4.1 Existing environment

The proposed activity is located within the Clyde catchment on the NSW south coast, which is generally southward flowing and about 3 260 km² in size. Water users within this catchment generally consist of Shoalhaven Water, Eurobodalla Shire Council, tourism, forestry, farming and fishing (DPE 2010).

Two waterways occur within the vicinity of the study area. The proposed activity is located about 920 m north of Abrahams Bosom Creek, which flows in a north-westerly direction, and within 20 m of the Pacific Ocean on Wilsons Beach (Figure 2).

Reference to the DPI's Fisheries NSW Spatial Data Portal [search: Southern Rivers] (DPI 2023b) identifies Abrahams Bosom Creek and the South Pacific Ocean surrounding Wilsons Beach as KFH (Figure 2).

The proposed activity is not mapped as flood planning area on the Shoalhaven LEP 2014 'Flood Planning Area Map'.

No wild or scenic rivers are present within the study area.

6.4.2 Methodology

No water extraction is proposed and no aquatic environments will be directly or indirectly affected by the scope of works proposed. Therefore, surveys in regards to this matter are not necessary.

6.4.3 Potential impact

The proposed activity is terrestrial in nature with the aim of improving the impacts of erosion. As the study area is mapped on the Shoalhaven LEP 2014 as "Beach Erosion/ Oceanic Inundation", the works will ultimately improve the current conditions.

The works will involve the emplacement of sandbags, with minor disturbance to the existing surface. With the implementation of standard erosion and sedimentation control structures during the works period, beyond any existing levels of disturbance, no waterway will be directly adversely affected by the proposed activities.

During construction, the potential exists for spills of hydraulic oil and fuels from equipment. In the instance of a spill occurring, the impact would be minor and localised as the quantity of hydraulic oil and fuels would be kept to a minimum and would be stored in a suitably bunded and covered area, away from any waterways. Adequate storage and refuelling controls would be installed to mitigate impacts. Plant and equipment would be maintained to minimise the potential for leakages.

Given the extent and scope of work proposed and the habitats to be affected, it is not considered necessary that assessment referencing the EPBC Act's Significant Impact Guidelines or Section 221ZV (Part 7A) of the FM Act in regard to the presence of State or Federally listed threatened fish be conducted.

6.4.4 Mitigation measures

The mitigation measures for water quality and hydrology impacts that are proposed to be implemented as part of the proposed activity are as follows:

- Mitigation measures will be implemented in accordance with the proposed activities procedures documented in a CEMP. They will include appropriate surface water mitigation measures to minimise impacts and the preparation of an erosion and sedimentation plan.
- Erosion and sediment controls designed in accordance with the Blue Book.
- Erosion and sediment control measures, e.g. sandbags or Coir logs, implemented before construction at any stockpiles or work areas to negate impacts to waterways via stormwater runoff.
- Erosion and sedimentation measures to be checked and maintained regularly, and records kept and provided on request.
- Erosion and sediment control measures not being removed until the works are complete and areas are stabilised.
- Water quality control measures are to be used to prevent any materials (e.g. concrete, grout, sediment) from entering waterways.
- No release of dirty water into drainage lines or waterways.
- Stockpiles will be located within existing disturbed/cleared, hardstand areas.
- Work will be programmed to coincide with periods of dry weather.

6.5 Groundwater

6.5.1 Existing environment

The project area is underlain by the Sydney Basin – South Coast Groundwater source which overlies the Lachlan Fold Belt – Coast Groundwater Source (NSW DPI 2016). The Permian and Triassic sedimentary rocks present in this source occur as layers of sandstone and shale.

6.5.2 Methodology

Groundwater Dependent Ecosystems (GDE) are communities of plants, animals and other organisms whose extent and life processes are dependent on groundwater. GDE's can be terrestrial or aquatic in nature, and are found in a broad range of environments.

A review of the GDE Atlas (BoM 2023b) identified that the proposed activity is not within land mapped as High potential Terrestrial GDE (Figure 4) or Aquatic GDE (Figure 5).

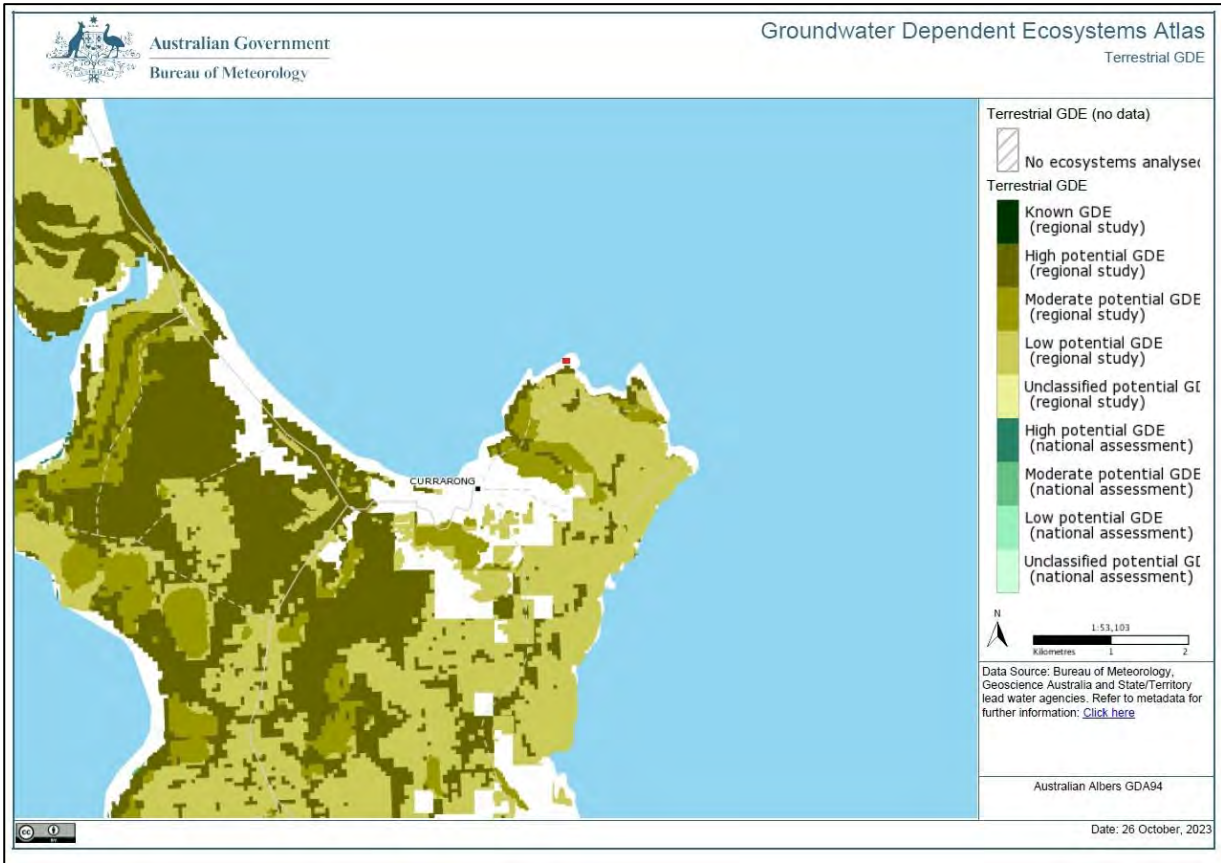


Figure 4 Terrestrial Groundwater Dependent Ecosystems

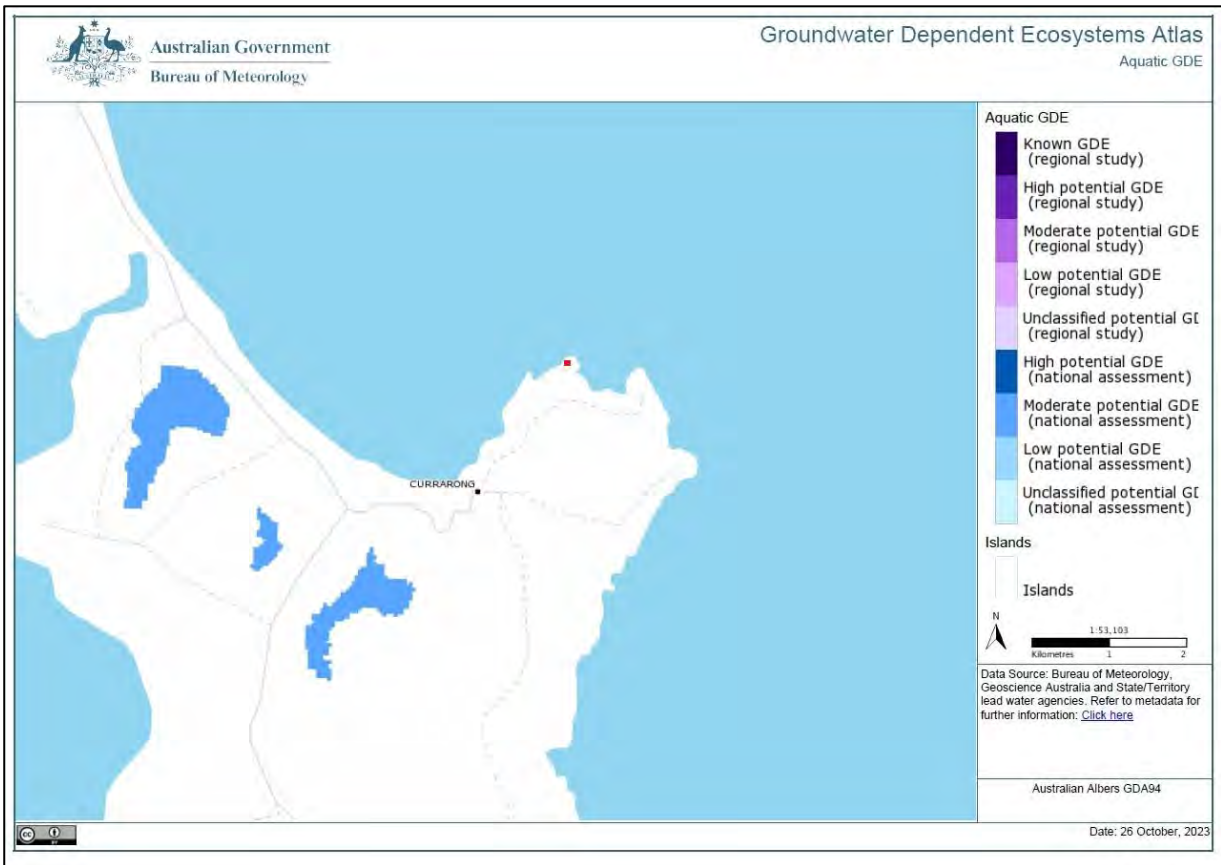


Figure 5 Aquatic Groundwater Dependent Ecosystems

6.5.3 Potential impact

In reference to the DPI's (Office of Water) Risk Assessment guidelines for GDE (Serov *et al.* 2012), the proposed activity will not have any adverse direct or indirect impact on a water source or aquifer structure, it would not involve groundwater extraction and, with the adoption of mitigation measures, would not contribute to the off-site movement of sediment.

6.5.4 Mitigation measures

No groundwater will be encountered during the proposed activities as no excavation is proposed. The mitigation measures for groundwater impacts that would be implemented are to ensure that no excavation is undertaken nor water released as part of the proposed activity.

6.6 Biodiversity

6.6.1 Existing environment

6.6.1.1 Areas of outstanding biodiversity value or critical habitat

Through reference to both the Australian Government and DPI Register of Critical Habitat (DCCEEW 2023c) and the NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) Area of Outstanding Biodiversity Value (AOBV) register (NSW DCCEEW 2023b) (in conjunction with Part 3 of the Biodiversity Conservation Regulation 2017), per listings provided under the EPBC, BC and FM Acts, no gazetted areas of critical habitat or AOBV for any flora, terrestrial fauna or aquatic species, populations or communities occur within or near to the activities proposed.

6.6.1.2 Vegetation communities

The plant community types (PCT) in the study area were reviewed with reference to the NSW State Vegetation Type Map (SVMT) (release C1.1.M1) (DPE 2022).

One PCT is mapped within the project site (refer to Figure 6), this being Shoalhaven Rockplate Heath (PCT 3809) with an existing distribution of 1509 ha. The PCT will not be impacted as no native vegetation is proposed to be removed. Plants recorded adjacent to the section of project site investigated are provided in Appendix 6.

The Shoalhaven Rockplate Heath (PCT 3809) is described as a tall heathland, closed heathland or rarely open mallee forest, found on skeletal Permian sandstone soils on lowlands and adjoining ranges in the Shoalhaven region. Eucalypt trees are occasionally present either as a canopy or emergent layer, with stunted *Corymbia gummifera* and mallees *Eucalyptus obstans* or *Eucalyptus multicaulis* the most frequent species. The shrub canopy almost always includes a high cover of *Allocasuarina distyla* and *Banksia ericifolia* with *Banksia paludosa* and smaller shrubs *Leucopogon esquamatus*, *Epacris microphylla* and *Melaleuca capitata* also very frequently recorded. The patchy ground layer often includes a sparse cover of sedges including *Lepyrodia scariosa* and *Chordifex fastigiatus* and the small forb *Actinotus minor*.

The primary distribution of this PCT is associated with low elevations of less than 80 m above sea level around Jervis Bay, where it forms a mosaic with the damp heath PCT 3917 on impeded soils. Outliers occur at higher elevation on the eastern edge of the Morton plateau where escarpment rainfall matches that of coastal areas (1090-1380 mm per annum). These extensive rocky ridges have fewer plots than the coastal parts of the distribution, and more survey is recommended.

The field survey confirmed that the vegetation mapping as presented in Figure 6 is accurate.

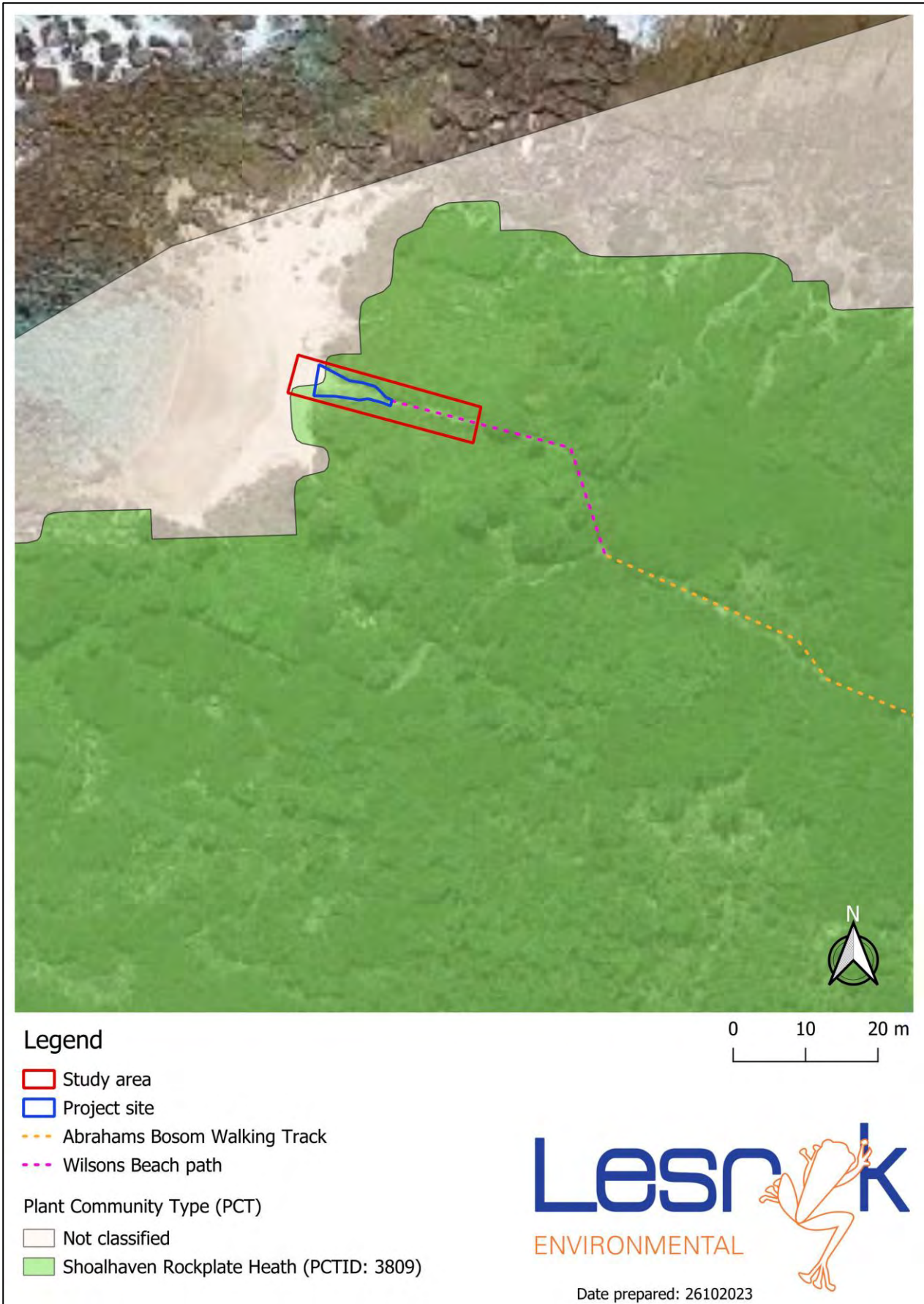


Figure 6 Plant Community Types (PCT)

6.6.1.3 Threatened ecological communities

PCT 3592 is not associated with a TEC listed, or currently being considered for listing, under the BC Act.

6.6.1.4 Flora species recorded

A cumulative flora species list was developed during the site survey and is presented in Appendix 6. It is noted that Appendix 6 is not intended to be a comprehensive list of all species present, and only represents those plants that were recorded while:

- verifying PCTs mapped within the study area
- searching for flora species of conservation concern and
- searching for weeds of significance that will require treatment.

In total, 32 flora species were recorded within the study area, 26 of these species being native.

In regards to the natives recorded, none are listed, or currently being considered for listing, under the BC Act.

6.6.1.5 Weeds

Under the *Biosecurity Act 2015* 'all plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.'

Of those introduced plant species identified during the survey, one species found, being Asparagus Fern (*Asparagus aethiopicus*), is listed under Schedule 3 of the NSW Biosecurity Regulation 2017, as a Weed of National Significance (WoNS) and priority weeds for the Southeast Region (this including the Shoalhaven LGA) (LLS 2022).

6.6.1.6 Fauna species recorded

During the field investigation, efforts were made to identify any animals (or areas of their documented habitats) that are of State and/or national conservation significance as listed under the Schedules to the EPBC and/or BC Acts.

While conducting the habitat assessments, efforts were made to identify features such as known vegetation associations, geological features, feed trees, mature trees with hollows, connectivity of fauna corridors, aquatic environments and other habitat features important to the lifecycle requirements of those threatened animals previously recorded in the study region.

The survey methods employed during the field investigation are detailed in Section 6.6.3 of this REF.

A cumulative fauna species list was developed during the site survey and is presented in Appendix 7. In total, 2 reptiles and 25 bird species were recorded within the study area. One introduced mammal was also identified.

SEPP (Biodiversity and Conservation) 2021

This Policy seeks to encourage the proper conservation and management of areas that provide habitat for Koalas. The City of Shoalhaven LGA is identified under Schedule 2 of the BCSEPP, and part of the Central and Southern Tablelands and South Coast Koala management areas. The BCSEPP only applies to

development assessed under Part 4 of the EP&A Act, not those considered under Part 5. That stated, it is expected that Crown Lands would consider the BCSEPP criteria as part of any environmental assessment process in relation to projects they carry out. It is acknowledged that no Koala Plan of Management exists for the locality.

The BioNet Atlas (DCCEEW 2023a) identified the nearest, and most recent [being the 2019-21 Community Wildlife Survey] previous Koala record to the study area as being about 10.5km northwest from the study area. No evidence (i.e., sightings, calls, scats etc.) to suggest that the area investigated supported a resident Koala population were identified.

In accordance with the following definitions provided under Chapter 4, s.4.2 of the SEPP, the study area is not considered to constitute Core Koala habitat:

- a) an area of land which has been assessed by a suitably qualified and experienced person as being highly suitable Koala habitat and where Koalas are recorded as being present at the time of assessment of the land as highly suitable Koala habitat, or
- b) an area of land which has been assessed by a suitably qualified and experienced person as being highly suitable Koala habitat and where Koalas have been recorded as being present in the previous 18 years.

The proposal will not require the preparation of a Plan of Management for the conservation and management of areas of Koala habitat. The work will not require the adoption of any specific mitigation measures relevant to this species.

6.6.1.7 Fauna habitat

Two habitat types available to native fauna was recorded within, or in proximity to, the existing track alignment, these being:

- Coastal Dune
- Coastal Heath/ Woodland

Though observed within the surrounding woodland, no hollow-bearing trees were recorded along, or close to, the study area investigated. Beyond the study area, It is noted that, along the access track of Abraham Bosoms Walking track, one hollow-bearing tree (Easting [302004], Northing[6123797]) was recorded to have a 15 cm diameter hollow limb overhanging about 3 m above the trail, this would not be directly or indirectly impacted by the proposal.

The proposed activities will not present any barriers to the movement patterns or interbreeding requirements of any native plants and animals (including aquatic species), nor further fragment or isolate any of their habitat areas.

6.6.1.8 Threatened species and populations

A list of the recorded flora and fauna species is provided in Appendix 6 and Appendix 7. Of those species detected, the following are listed under either the BC or EPBC Acts.

- **BC Act**
 - White-bellied Sea-eagle (*Haliaeetus leucogaster*) – listed as Vulnerable under this Act
 - Sooty Oystercatcher (*Haematopus fuliginosus*) - Vulnerable

- Eastern Bristlebird – southern subspecies (*Dasyornis brachypterus brachypterus*) - Endangered
- **EPBC Act**
 - White-bellied Sea-eagle (*Haliaeetus leucogaster*) - Marine
 - Eastern Bristlebird – southern subspecies (*Dasyornis brachypterus brachypterus*) – Endangered.

Tests for determining whether the proposed activity is likely to affect those threatened species recorded have been conducted in accordance with both Section 7.3 of the BC Act and Part 3 Subdivision C of the EPBC Act. The results of the impacts under state and federal legislation are summarised in Section 6.6.3.

As the proposed work is not located within the Commonwealth marine area, this being from 3 to 200 nautical miles from the coast, no assessments referencing the EPBC Significant Impact Guidelines for the White-bellied Sea-eagle (a marine species) are necessary.

All of the remaining native animals detected during the course of the field inspection are protected, as defined by the BC Act, but considered to be common to abundant throughout, and well conserved within, the surrounding region. These species would not be solely reliant upon the resources present within the disturbance footprint such that the permanent or temporary disturbance of these would threaten the occurrence of these animals. The species recorded are all expected to be present within both the subject site and surrounding locality post-work.

A review of the BioNet Atlas (NSW DCCEEW 2023a) identified 10 threatened plants and 56 threatened animals listed under the Schedules of the EPBC and BC Acts that have been previously recorded, or are considered to have habitat, within a 10 km radius of the study area (Appendix 8) (Figure 7 and Figure 8). The PMST (DCCEEW 2023a) was reviewed for the study area in Appendix 9. Records for pelagic, estuarine, wetland or fish species were not considered as the area investigated does not support the necessary foraging and breeding habitats for these species.

During the field inspection, a consideration was given to locating any habitats (such as hollow-bearing trees, developed woodlands, rocky platforms and so forth) that would be important for the local occurrence of those animals listed in Appendix 8. In addition, indirect evidence of site occupation by a number of the species listed in Appendix 8, such as the occurrence of large stick nests, suitable sheltering caves, white-wash accumulations, and so forth were considered during the course of the field survey. At the completion of the inspection, none of these matters were identified.

While previously recorded within and/or predicted as having habitat in the study region, the majority of the threatened species listed in Appendix 8 would not occur within, or be reliant upon for their lifecycle requirements, the environments present within the area investigated. These species have specific habitat requirements as identified in Appendix 8 (provided in standard texts/online profiles – refer to the bibliography section for those used), no major components of which are present within, or close to, the area investigated.



Figure 7 Previously recorded threatened flora

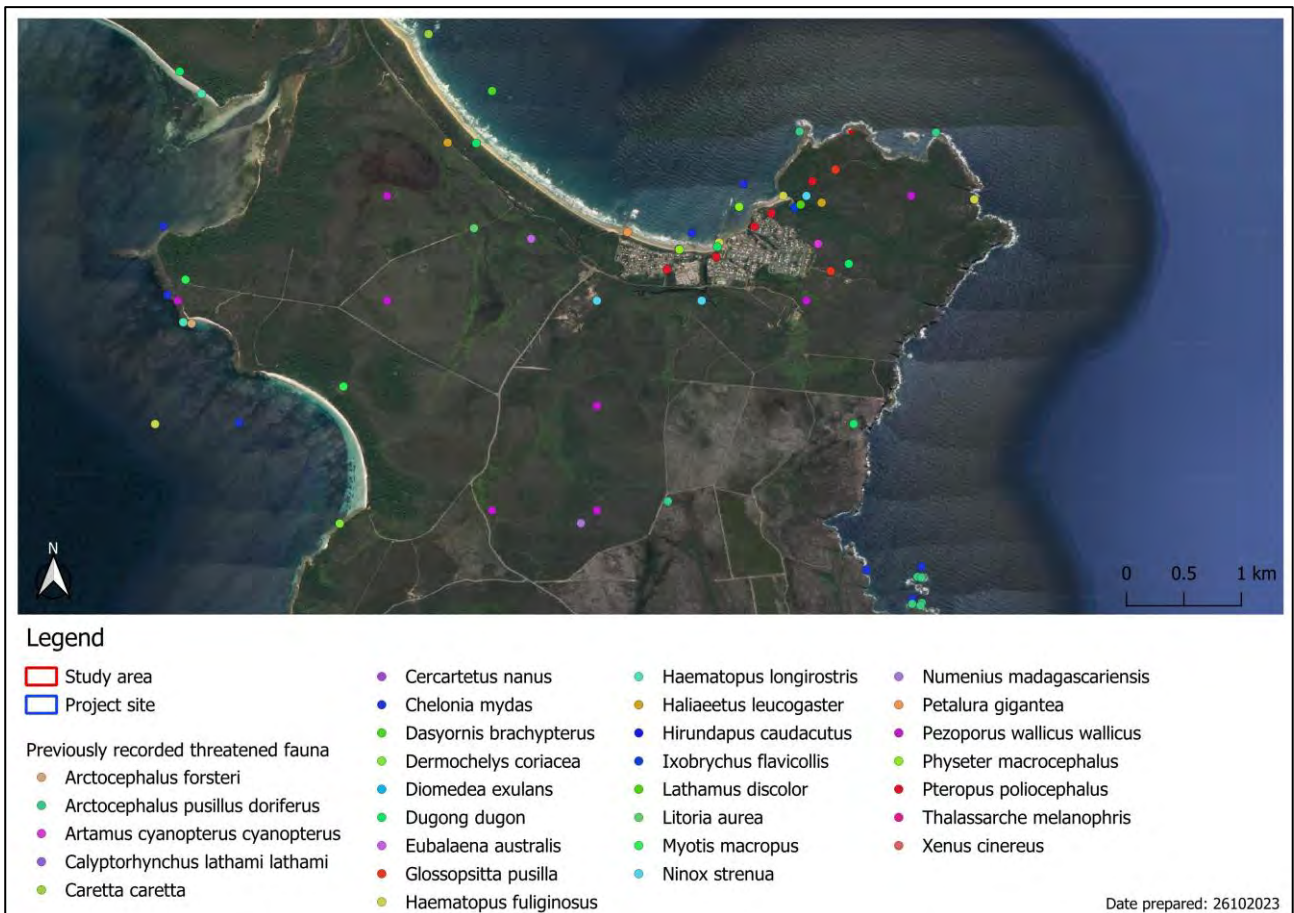


Figure 8 Previously recorded threatened fauna

6.6.2 Methodology

An ecological inspection of the study area was conducted by Chelsea Tiller (B.Soc.Sci) [Field ecologist] and Sarah Maher (B.Sci.) [Field ecologist] in the company of Keith Moore [Soil Conservation Services representative] on 16 November, and by Harry Engel (B.Mar.Sci) [Senior ecologist] on 2 December, 2023. For reference, the weather conditions experienced during the site inspections were:

- 16 November 2023 – mild temperatures (~19 °C), 70% cloud cover, and light breeze
- 2 December 2023 – mild temperatures (~21 °C), 100% cloud cover, and mild breeze.

During the investigation, the survey methods employed included the following:

- the documentation of the structure of the fauna habitats and vegetation communities present in, and adjacent to, the proposal area
- the identification of those species observed or heard calling, with indirect evidence of site occupation by any particular species also recorded (e.g. presence of scats, diggings or white wash)
- the compilation of a flora species list for the purpose of verifying PCTs mapped within the study area, and to aid in searching for flora species of conservation concern and weeds of significance that would require treatment

- targeted searches for those species of State and national conservation concern, or their likely habitat areas, that were identified during the literature review stage of the project
- where suitable habitat was observed, targeted surveys for those threatened species previously recorded, were conducted
- inspection of areas of ground surface exposure and any built features.

During the field investigation, no limitations to achieving the objective of the survey were encountered. No limitations such as adverse weather conditions, reduced site access or visibility (i.e. dense bushland) were encountered.

The proposed activity will not require the removal of any native vegetation.

6.6.3 Potential impact

The following threatened species were recorded during the course of the site inspections (Figure 9).

- **BC Act**
 - White-bellied Sea-eagle (*Haliaeetus leucogaster*) – listed as Vulnerable under this Act
 - Observed 357 m south-west of the site. During this field survey, no large stick nests were observed within any of the trees that occur in proximity to the study area.
 - Sooty Oystercatcher (*Haematopus fuliginosus*) – Vulnerable
 - One individual observed on approximate rocky platform that is present about 40 m north east of the study area. When noticed, this bird was observed foraging across the rock platform. The works proposed will not have a direct or indirect impact on this habitat type. This species is not considered to be reliant upon the resources present within the study area.
 - Eastern Bristlebird – southern subspecies (*Dasyornis brachypterus brachypterus*) – Endangered
 - Observed 563 m south-west of the site.. No vegetation will be cleared and no barriers to the movement patterns of this species (beyond those that currently exist) will be erected.
- **EPBC Act**
 - White-bellied Sea-eagle (*Haliaeetus leucogaster*) - Marine
 - Eastern Bristlebird – southern subspecies (*Dasyornis brachypterus brachypterus*) – Endangered.



Figure 9 Threatened species located

The results of the assessments conducted on these species, these drawing on applicable state and federal legislations, are summarised in Table 8.

Table 6: Summary of Assessments of Impact of the Proposal on Threatened Values.

BC Act Assessments of Significance							
Common name	Scientific Name	Significance assessment questions ¹					Likely significant impact?
		a	b	c	d	e	
White-bellied Sea-eagle	<i>Haliaeetus leucogaster</i>	N	X	N	N	N	N
Sooty Oystercatcher	<i>Haematopus fuliginosus</i>	N	X	N	N	N	N
Eastern Bristlebird – southern subspecies	<i>Dasyornis brachypterus brachypterus</i>	N	X	N	N	N	N

EPBC Assessment

Threatened species or communities		Important population	Likely significant impact?
Eastern Bristlebird – southern subspecies	<i>Dasyornis brachypterus</i> <i>brachypterus</i>	No. The proposed action is unlikely to have a significant impact on the presence of the Eastern Bristlebird or its habitat within the locality.	N
<p><i>Y = Yes (negative impact), N = No (neutral or positive impact), X = not applicable</i></p> <p>Note 1: Appendix 3</p>			

The proposed activity will take place within a disturbed and eroded environment and will not involve the removal of native vegetation; therefore, the works would not significantly impact any threatened species, ecological communities or migratory species listed under the BC Act, FM Act or EPBC Act.

6.6.4 Mitigation measures

The mitigation measures for biodiversity impacts that are proposed to be implemented as part of the proposed activity are as follows:

- Vegetation to be retained should be clearly marked and/or temporarily fenced before the commencement of construction works.
- If additional clearing works are required, these will be subject to additional ecological inspections and assessment.
- Ensure that machinery is free of weed material before entering and exiting the works area to avoid introducing or spreading weed species.
- The occurrences of Asparagus Fern (*Asparagus aethiopicus*) present near the works site should be hand removed and disposed of at an appropriate waste facility.
- Erosion and sediment control measures should be implemented around the works area and any associated stockpiles to avoid impacts to waterways via stormwater runoff.
- If unexpected threatened fauna or flora species are discovered, stop works immediately and contact the Project Manager.
- Ensure the aircraft hovers over the site whilst delivering materials, with the landing site located offsite on an already established landing pad.

6.7 Aboriginal Archaeology and Heritage

6.7.1 Existing environment

An ACHAR has been prepared to assess the proposal (Apex 2023a). To inform the ACHA, a site visit was conducted on 9 June 2023 by Apex archaeologists Leigh and Jenni Bate and the Registered Aboriginal Parties (RAPs) for the project.

The assessment is required to determine if the proposed activities have potential to impact Aboriginal heritage items, in accordance with Heritage NSW *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW 2010).

A basic search conducted by Apex (2023a) on 21 November 2022 identified a registered site within the study area. Following this, an extensive search on the 6th of June 2023 identified AHIMS #58-2-0054 as a shell midden.

The study area is situated in an area with outcropping sandstone within undulating low-lying sand dune covered in vegetation (Apex 2023a). The site card for AHIMS #58-2-0054 was recorded in 1977 and again in 1980 as deep shell midden with the environment reworked due to erosion, with no mention of stone artefacts, faunal remains, and/or charcoal deposits found (Apex 2023b). Due to this, it is difficult to definitively state that the site constitutes a cultural midden. However, as the site is registered on the AHIMS as a cultural site, to exercise the necessary caution, the shell deposits have been considered a cultural shell midden (Apex 2023b;).

AHIMS #58-2-0054 is the only site registered on Wilsons Beach and within an approximate 300m radius (Apex 2023a).

The proposal will take place upon AHIMS #58-2-0054 in order to protect the site from further degradation by erosion and pedestrian impacts. The study area is located within 200 m of waters and is located within a sand dune system.

An Archaeological Report (AR) has been prepared for the proposal by Apex (2023b) to determine archaeological significance of the potential Aboriginal shell midden and if the proposal may harm Aboriginal cultural heritage. The study area was found to be highly disturbed with limited research potential (Apex 2023b, Appendix 9). AHIMS site #58-2-0054 is not a rare site in the locality and there is limited archaeological evidence present (Apex 2023b).

Section 4 of the ACHAR (Apex 2023a) found *'The assessed study area is not considered to have any specific scientific value. The exposed shell deposit is of low research or educational value due to its fragmentary nature and lack of evidence of associated Aboriginal cultural material, such as stone and shell artefacts. Evidence of Aboriginal cultural material may be contained in subsurface deposits in the surrounding areas, but these will not be impacted by the proposed remediation works. As such, the scientific value of the study area is considered to be low.'*

6.7.2 Methodology

The archaeological inspection was conducted by Leigh Bate [Archaeologist] and Jenni Bate [Archaeologist], in the company of the following RAPs for the project (Apex 2023a, 2023b):

- Djirringani Elders
- Gumaraa Aboriginal Experience Pty Ltd
- Guntawang Aboriginal Resources
- Kamilaroi Yankunytjatjara Working Group
- Murrabidgee Mullangari
- Raw Cultural Healing
- South Coast People (registered Native Title Claimants)
- Sonione Qagabut Rogers Wingarra Wilay

Jerringa Local Aboriginal Land Council was registered as a RAP, but was unable to attend on the day (Apex 2023a; 2023b).

The ACHAR (Apex 2023a) has been prepared in accordance with current heritage best practice and the guidelines of Heritage NSW – *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (2011) and *the Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW, 2010). As such, the due diligence assessment has addressed the following requirements:

- Identify any previously recorded Aboriginal sites;
- Develop a predictive model for local Aboriginal archaeological sites, including any landscape features within the study area which are likely to indicate the presence of Aboriginal objects; and
- identify any constraints resulting from Aboriginal objects that may be present within the study area, and any requirements for additional Aboriginal heritage investigations or permits.

The following tasks have been undertaken to fulfill the above requirements:

- a search and review of the AHIMS database, to identify the location and type of any Aboriginal sites recorded within the study area or its vicinity;
- a review of relevant environmental information and the Aboriginal heritage context;
- a review of available relevant previous Aboriginal heritage reports, to determine the extent of past archaeological research into the local area;
- the preparation of a report outlining the results of the background research; detailing whether the proposed activity is likely to impact on identified Aboriginal sites or areas of potential archaeological sensitivity; identifying appropriate recommendations for avoidance of impacts to identified Aboriginal heritage sites and areas of archaeological potential; and, if required, identifying triggers for additional archaeological assessments and recommendations for Aboriginal heritage management within the study area.
- Consultation with members of the local Aboriginal community as per Heritage NSW’s *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCRs) (DECCW 2010).

6.7.3 Potential impact

The ACHAR and AR (Apex 2023a, 2023b) found the level of archaeological assessment undertaken, and the results of the background analysis suggest that it is unlikely that further archaeological assessment of the study area will increase the scientific understanding of the region and that it is not possible to definitively state whether the shell deposit is an Aboriginal midden or not. However, given it is registered on the AHIMS as site #58-2-0054, the exposed area of the shell is to be managed appropriately (Apex 2023a).

The removal of the steel staircase will be undertaken through cutting the attached metal poles off the sandstone boulders with an angle grinder, and continuing to cut the staircase into hand-held transportable pieces to allow for removal from site. Fill, such as clean sand, will be laid over geofabric material to facilitate the safe access to the beach for pedestrians, as well as protect the shell deposit from further impacts. The sandstone will be retained (Apex 2023a).

The proposed activity will positively impact AHIMS site #58-2-0054 through remediation and protection against further erosion and pedestrian impacts; thus, preserving cultural heritage values of the site (Apex 2023a, 2023b).

The proposed activity will not disturb any culturally modified trees as no native vegetation removal will be undertaken.

Cultural remains of Aboriginal people have been previously recorded in shell middens with rockshelters within the Beecroft Peninsula, and sand dune deposits in Jervis Bay (Apex 2023a, 2023b). Through remediation works to the site, any cultural remains that may be present below or around the shell midden will be preserved.

Section 6.3.2 of the ACHAR (Apex 2023a) states that the proposal *“has an acceptable and beneficial impact on the Aboriginal cultural heritage of the region, particularly if the proposed remediation and rectification measures are enacted.”*

6.7.4 Mitigation measures

The mitigation measures for impacts on Aboriginal archaeology that are proposed to be implemented as part of the proposed activity by Apex (2023a) are as follows:

- Recommendation 1
 - Obtain an Aboriginal Heritage Impact Permit (AHIP) to permit rectification works to occur in the vicinity of the exposed shell deposit.
 - Cover project site in geotextile fabric before sandbags and fill are placed, to ensure no further impact to heritage occurs to this location.
 - Conduct minor drainage works to direct waterflow away from the access track.
- Recommendation 2
 - Maintain valid Aboriginal Community Consultation, including notification to RAPs when the AHIP application is lodged and in the event that it is issued.
- Recommendation 3
 - Contain the proposed activity within the assessed boundary for the proposal.
 - Further investigation of areas which have not been assessed should be completed in the event alteration to the currently assessed boundaries occurs.
- Recommendation 4
 - If an Aboriginal object is identified whilst carrying out the activity within the study area, all activities in the immediate vicinity of the identified Aboriginal object will cease, and a suitably qualified archaeologist should be contacted to confirm the validity of the object. Objects that are confirmed to be of Aboriginal cultural origin must be reported to Heritage NSW.

- In the unlikely event that suspected human remains are identified during remediation works, all activity in the vicinity of the find must cease immediately and the find protected from harm or damage. The NSW police and Coroner’s office must be notified immediately. If the finds are confirmed to be of Aboriginal human origin, a suitably qualified archaeologist, in consultation with Heritage NSW and the project RAPs, would be necessary.
- Recommendation 5
 - A digital copy of the ACHAR report should be forwarded to Heritage NSW to support the AHIP application and for inclusion on the AHIMS.
 - A copy of the ACHAR should be forwarded to the RAPs for the project.

6.8 Non-Aboriginal archaeology and heritage

6.8.1 Existing environment

The proposed work area is located within an existing walking track that permits access to Wilsons Beach from Abrahams Bosom Walking Track. The walking track is about 1 m wide, 50 m long and is a combination of sand and soil.

6.8.2 Methodology

In order to inform the REF, Lesryk conducted a desktop search of the following databases (Table 9), and applicable statutory and non-statutory lists and registers, to identify the location and significance of any previously registered non-Aboriginal cultural heritage items or places within, or near to, the study area.

Table 7 Applicable heritage sites

Database	Comments
World Heritage List (WHL)	No items within or near the vicinity of the proposed activity were identified.
National Heritage List (NHL)	No items within or near the vicinity of the proposed activity were identified.
Commonwealth Heritage List (CHL)	No items within the proposed activity were identified. Beecroft Peninsula is listed on the CHL, which is located about 2.1 km from the study area.
State Heritage Register (SHR)	No items within or near the vicinity of the proposed activity were identified.
Shoalhaven LEP 2014	Local heritage listed within Item 19: Wreck of the “Merimbula” – Beecroft peninsula

6.8.3 Potential impact

There are no known statutory heritage listings or potential non-Aboriginal archaeological sites within the study area.

The Wreck of the “Merimbula” (#19) is locally listed on the Shoalhaven LEP 2014 and covers the entire Abrahams Bosom Reserve (Figure 10). The actual location of the wreck is positioned to the north side of the reef which extends from Whale Point in the Beecroft Peninsula (Nutley & Smith 1992), about 350 m away from the study area. As the proposed activity will be undertaken on land, it is unlikely that Item #19 will be affected.

Items #187-189 are located in the vicinity of the study area, about 1.2 km, 1.7 km and 1.6 km from the study area respectively. The proposed activity will not impact these sites during construction or operation.

As no excavation is proposed, there is no potential for possible archaeological remains to be impacted by the proposed activity during construction or operation. Through the emplacement of the sandbags, the site will retain its significance by protecting the site from further erosional impacts.

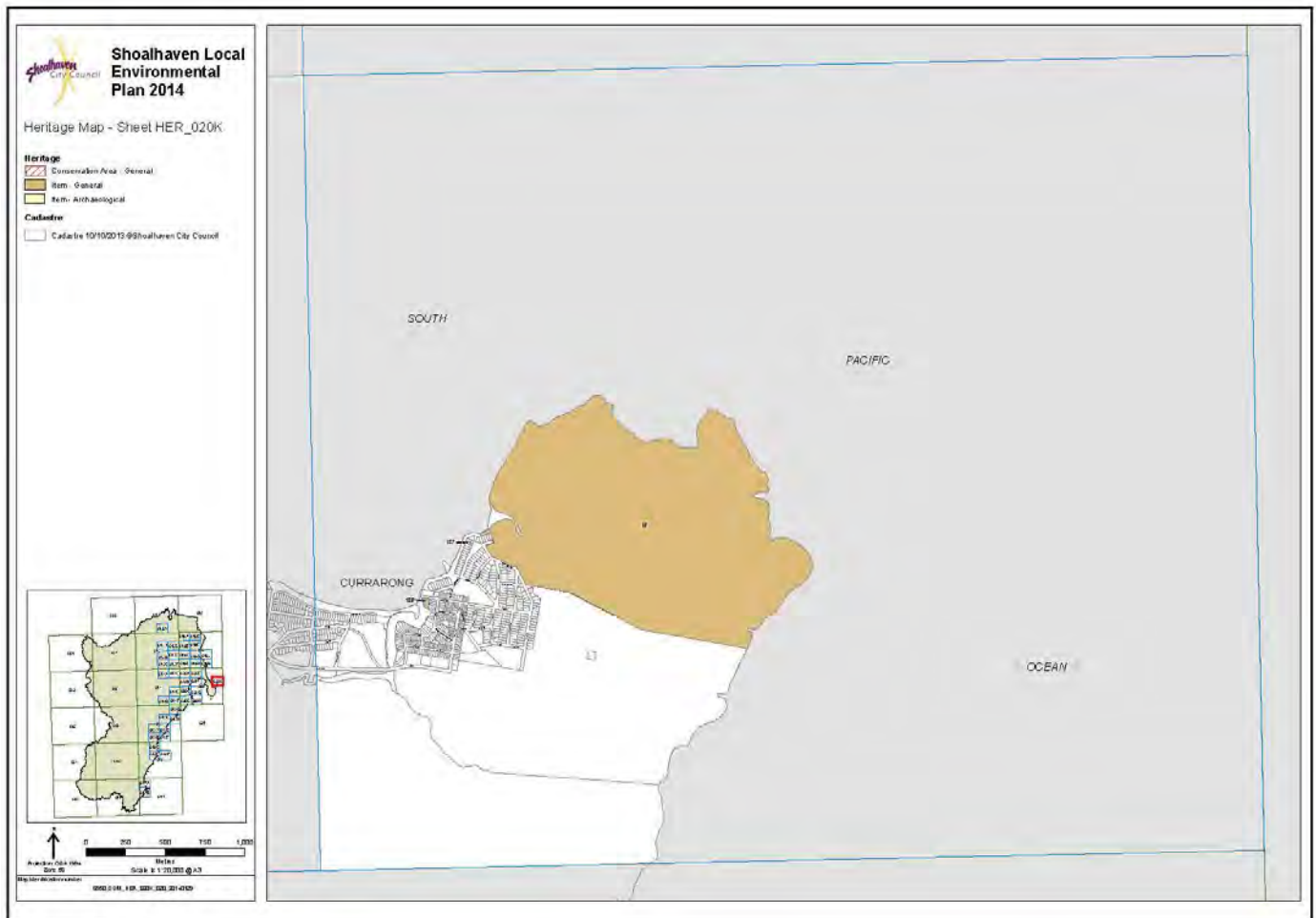


Figure 10 Source: Shoalhaven LEP (2014) Heritage Map

6.8.4 Mitigation measures

The mitigation measures for impacts on non-Aboriginal archaeology that are proposed to be implemented as part of the proposed activity are as follows:

- If previously unknown historical, archaeological material or heritage items are discovered during the proposed activity, all work in the area of the item(s) shall cease immediately. The Project Manager will contact Heritage NSW and engage a qualified heritage consultant, in accordance with section 146 of the *Heritage Act*, to determine an appropriate course of action before the recommencement of work in the vicinity of the item.

6.9 Noise and vibration

6.9.1 Existing environment

The nearest sensitive receiver to the study area is a residential property that occurs 1.2 km southwest of the study area.

During construction, activities associated with the proposal may cause additional noise and vibration; however, the proposed activity impact is considered to be temporary and short-term. The Draft Construction Noise Guideline (EPA 2020) would be referenced, as would compliance of all vehicles and machinery with industry noise guidelines.

The Beecroft Weapons Range (BWR) is located about 3 km from the study area, and has been owned and utilised by the Royal Australian Navy (RAN) since the 1800s. Activities at this location include (but are not restricted to) are as follows:

- Mortar and small arms firing
- Practice bombing with dummy bombs by military aircraft
- Navel guns firing ammunition
- Feral animal eradication
- Lighthouse road maintenance

6.9.2 Methodology

As specified in Section 2.3, works hours will be in accordance with the Draft Construction Noise Guideline (EPA 2020):

- 7:00 am – 6:00 pm Monday to Friday
- 8:00 am – 1:00 pm Saturday
- No work on Sunday or public holidays

No out-of-hours work is proposed.

Equipment to be used on site is detailed in Section 2.5.

6.9.3 Potential impact

Minor noise impacts may be experienced by nearby residences (located 1.2 km southwest from the study area and 60 m south of the Abrahams Bosom Walking Track), members of the public utilising the surrounding area, and wildlife – such as nesting fauna, due to the use of the aircraft transporting materials to the project site and the use of machinery. However, these impacts will be short-term/temporary occurring during the construction period.

The use of the aircraft to deliver materials has been considered to reduce impacts on the track and reduce the timeframe of construction impacts; from multiple days with a digger/ excavator machine to two hours with the helicopter.

Given the presence of the existing road network and its use by residents, as well as the current activities undertaken by the RAN at BWR, it is not considered that the proposed activity would result in adverse

changes to existing levels of noise, vibration and/or light from this existing source such that there would be a significant impact to native fauna species or nearby sensitive receivers.

6.9.4 Mitigation measures

The mitigation measures for noise and vibration impacts that are proposed to be implemented as part of the proposed activity are as follows:

- All works must be undertaken in accordance with construction noise guidelines.
- Nearby sensitive receivers must be notified regarding the commencement and duration of construction activities.
- Nearby residents and businesses must be made aware of the contact details of the complaints handling system.
- All works will be undertaken during standard construction hours, Monday to Friday, 7am to 6pm and Saturday, 8am to 1pm OR where practical, undertake the disruptive works (those causing the most significant noise and vibration impacts) during the standard work hours.
- Turn off machinery that is not being used.
- Examine and implement, where feasible and reasonable, alternative work practices which generate less noise or vibration impacts.
- Ensure plant is regularly maintained, and repair or replace equipment that becomes noisy or causes excessive vibration impacts.
- All employees and contractors should receive an environmental induction before the commencement of work. The induction should include but not be limited to:
 - relevant project-specific and standard noise and vibration mitigation measures
 - permissible hours of work
 - location of nearest sensitive receivers.
- Keep vehicle drivers informed of designated vehicle routes, parking locations, acceptable delivery hours or other relevant practices (for example, minimising the use of engine brakes and no extended periods of engine idling). Avoid the use of radios or stereos outdoors where neighbours can be affected.
- Regularly train personnel and contractors (such as at toolbox talks) to use equipment in ways to minimise noise.

6.10 Air quality

6.10.1 Existing environment

Several residential properties occur near the entrance to the Abraham's Bosom Walking Track and the carpark, the closest being approximately 1.2 km from the proposed activity (Figure 2). Components of the proposed activity considered to emit emissions during construction (i.e. dust through angle grinding or the emplacement of the sandbags or helicopter usage) will be monitored and controlled. If dust from machinery is impacting user visibility, work will stop, and the work method reviewed to avoid impact.

There are no nearby developments that may influence the air quality environment.

It is considered that emissions from the proposal would be consistent with existing emissions from road and other local sources. The potential impact would be low and minimised with the implementation of the safeguards listed below.

6.10.2 Methodology

Equipment to be used on site is detailed in Section 2.5. A helicopter will be utilised to transport the material and machinery to site.

6.10.3 Potential impact

The proposed activity will have minor, temporary/short-term dust, noise and/or vibration impact associated with the use of the helicopter and operation of machinery – primarily the negligible level of grinding dust produced with the use of the angle grinder, the presence of personnel and the occupation of the site during the course of the proposed activity. This will impact sensitive receivers and potential users of the investigated area.

It is considered that emissions from the proposal would be consistent with existing emissions from road and other local sources, such as the BWR. The potential impact would be low and minimised with the implementation of the safeguards listed below.

The proposed activity will not result in odour creation.

6.10.4 Mitigation measures

The mitigation measures for air quality impacts that are proposed to be implemented as part of the proposed activity are as follows:

- Air quality mitigation strategies must be prepared and implemented as part of the CEMP.
- Potential dust impact generated from activities (e.g., angle grinding) will be monitored (e.g. to ensure it is not reducing visibility). If dust impact is more than is manageable, work will stop and the work method reviewed.
- Exposed areas must be restricted to the smallest extent possible and for as short a time as possible.
- Dust suppression must be maintained throughout the duration of the proposed activity.
- Adjust the intensity of the activities according to the weather conditions.
- Where possible, minimise the extent of loose materials stockpiled at the site.
- Position stockpiling areas away from drainage lines and cover or stabilise them if in place for longer than 10 days.
- Machinery, aircrafts and equipment must be inspected before the commencement of works on site.
- Machinery, plant and equipment used in construction must be maintained to appropriate operating standards, with regular inspections to ensure that it continues to operate efficiently.

- Ensure personnel are wearing appropriate Personal Protective Equipment (PPE), such as respiratory protection, to prevent the inhalation of grinding dust while utilising the angle grinder.
- Machinery must not be left idling or running when not in use.
- All land disturbed by earthworks will be stabilised before the decommissioning of the study area.

6.11 Traffic and transport

6.11.1 Existing environment

The Abrahams Bosom Walking Track entrance is accessed on foot from the carpark, which is located at 3 Beecroft Parade, a local road within Currarong (Figure 1). The proposed activity will allow for personnel to access the project site on foot using this walking track.

Materials will be transported to site either on foot or through use of a helicopter. As the proposed activities are located in a sensitive area, the aircraft will not land on site, but hover whilst delivering the materials and equipment.

6.11.2 Methodology

Designated pre-existing aircraft landing sites will be located offsite and chosen considering safety, operational efficiency, and minimal impact on local communities and transportation. A flight schedule will be developed based on existing traffic patterns in order to minimise conflict with vehicles, pedestrians and other aircrafts in the locality.

6.11.3 Potential impact

Temporary disruptions to the typical recreational use of Wilsons Beach and pedestrian movement will be experienced as a result of the proposal. However, these would be short-term/ temporary and would primarily be experienced over a period of about two hours.

The utilisation of a helicopter for material delivery to the site is anticipated to yield minimal environmental impacts. The use of an aircraft conforms with the local context, where the presence of a nearby weapons range routinely accommodates aircraft activities. Consequently, the introduction of a helicopter for the purposes of the proposal is not expected to be incongruous within the established operational framework of the locality.

6.11.4 Mitigation measures

The mitigation measures for traffic and transport impacts that are proposed to be implemented as part of the proposed activity are as follows:

- Detail the specific traffic mitigation measures within the CEMP and consult with local residences and businesses.
- Erect signage to inform and redirect pedestrian movements during construction.
- Works must be coordinated around the busy holiday period to minimise the disruption to local residents and tourists visiting the area.
- Establish scheduled flight operations, including flight routes and detour plans, to allow for better coordination with existing ground transportation schedules, reducing conflicts and disruptions.

- Avoid aircraft use during peak hours to minimise disruptions and conflicts associated with heavy pedestrian or vehicular traffic.
- Develop and communicate clear emergency response and contingency plans to address unexpected situations or disruptions to traffic flow caused by aircraft operations.
- Define access control zones around landing sites to regulate and communicate restrictions during aircraft activities.

6.12 Waste

6.12.1 Existing environment

The proposed activity is located on a beach, which is a sensitive environment due to its proximity to the shoreline – any waste generated may have visual and ecological implications. Considering this, proper management and responsible disposal practices as per the *Waste Avoidance and Resource Recovery Act 2001* are crucial to mitigate potential impacts on the coastal environment.

6.12.2 Methodology

Refer to Sections 6.12.1, 6.12.3, and 6.12.4.

6.12.3 Potential impact

During construction, the following waste may be generated as a result of the proposed activity:

- usage of the angle grinder for staircase removal has the potential to produce steel debris and grinding dust,
- delivery of materials may result in unused or damaged sandbags,
- personnel may generate waste, including packaging, food containers, and disposable items.

During the operation or decommissioning phase, the potential for waste may arise from the deterioration or breakage of sandbags. Implementing ongoing monitoring and maintenance protocols enables timely detection of sandbag degradation or breakage, allowing for mitigation measures to be enacted.

The materials, being sandbags with clean fill and geotextile fabric, are not considered to be limited in availability.

The proposed activity will not generate wastewater that will require offsite disposal, nor will it require an environmental protection license to conduct works as it is not a listed activity under Schedule 1 of the *Protection of the Environment Operations Act 1997*.

6.12.4 Mitigation measures

The mitigation measures for waste impacts that are proposed to be implemented as part of the proposed activity are as follows:

- A Waste Management Plan will be prepared as part of the CEMP, including the following control measures:

- Waste will be classified before being disposed to an appropriately licenced facility in accordance with Waste Classification Guidelines: Part 1 Classifying Waste (EPA 2014).
 - All waste from the demolition will be transferred by a licenced contractor to a licenced receiving facility in accordance with EPA Waste Classification Guidelines. Where necessary, this will include sampling and analysis.
 - Vehicles that are transporting materials will comply with Transport for NSW standards (i.e., loads covered and complying with designated speed limits).
 - Spill management as noted in 9.1(5).
 - Visual inspection of site post-completion of the work to ensure the area is clean.
- Any excess construction or demolition material will be disposed of at an appropriately licensed facility.
 - Consider the use of dust suppressants to bind dust particles, or implement barriers, to minimise dispersion of dust.
 - Waste generated by the proposed activity will be recycled as a first preference. However, the handling, transport and disposal/re-use of materials should be undertaken in accordance with regulatory and statutory requirements.
 - Construction works to be undertaken in accordance with a CEMP.
 - Ongoing maintenance and monitoring to be conducted for the site.

6.13 Visual amenity

6.13.1 Existing environment

The proposed activity is located upon a significant cultural element; being an Aboriginal shell midden that is currently being degraded through erosion. The existing visual landscape character within the study area is shown in Appendix 5.

Given the proposed remediation work will be located within the previously disturbed footprint of the access to Wilsons Beach, there will be no reduction or adverse impact on any scenic or visually significant areas in the long-term.

Due to the location of the project site (i.e. dense bushland setting of the Abraham Bosom Reserve), views of Wilson Beach, particularly from any sensitive receivers (1.2 km away) or neighbouring vantage points and properties, are non-existent. Post-remediation, particularly considering the lack of native vegetation removal, the site will essentially reflect its current character.

6.13.2 Methodology

Refer to section 6.13.1 of the report.

6.13.3 Potential impact

During construction, the proposed activities will generate temporary, localised visual impacts; including the presence of a helicopter, machinery and plant, as well as site equipment detailed in Section 2.5. These will be minor and mitigated where required and practicable.

The proposed activity will take place predominantly in the footprint of previously disturbed areas; as such, the scope of work proposed will not significantly alter the visual or scenic landscape of the area. No native vegetation removal is expected to be required. The proposal involves the removal of a human-made steel staircase and the placement of sandbags; these being in keeping with existing elements.

The main visual change for track users will be those associated with the introduced sandbags. While the visibility of the potential Aboriginal midden will be affected by the proposed activity; if the proposed activity does not take place, erosion of the deposit would continue to persist and the midden eventually destroyed.

6.13.4 Mitigation measures

The mitigation measures for visual amenity impacts that are proposed to be implemented as part of the proposed activity are as follows:

- The site, including the site compound, will be kept in an orderly state throughout the period of the proposed activity.
- The work site and any adjacent areas will be cleared of all materials and refuse on completion of the proposed activity.
- The work site will be restored to be as close to the original state as possible upon completion of the proposed activity.

6.14 Socio-economic factors

6.14.1 Existing environment

The proposed activity is located within the locality of Currarong in Shoalhaven LGA. The relevant zoning for the proposal is referred to in Section 6.1.1. The Abrahams Bosom Reserve in Currarong offers recreational values such as bushwalking, bird watching, swimming and snorkelling, and other passive recreational pursuits.

The proposed activity will not require the relocation of utilities within the study area.

6.14.2 Methodology

As the work will be undertaken on crown lands, no property acquisition will be required for the proposed activity. The proposed activity will be conducted during standard working hours according to the Draft Construction Noise Guideline (Environment Protection Authority [EPA] 2020) and may be permitted:

- 7:00 am – 6:00 pm Monday to Friday
- 8:00 am – 1:00 pm Saturday.

No work will be carried out on Sundays or during public holidays.

6.14.3 Potential impact

During the construction period, the proposal may result in the following temporary/ short-term impacts to the public:

- disruptions to pedestrian access to Wilsons Beach whilst the access track is being repaired
- minor noise and air quality impacts (addressed in Section 6.9 and 6.10)
- reduced visibility of the potential Aboriginal shell midden (addressed in Section 6.13).

Following the construction period, the proposal will ultimately have a positive impact on track user safety, reducing the risk of trips and slips on the eroded beach access. Furthermore, by protecting the shell midden from further erosional impacts, cultural values will be preserved for future generations to appreciate.

6.14.4 Mitigation measures

The mitigation measures for socio-economic impacts that are proposed to be implemented as part of the proposed activity are as follows:

- undertake consultation with neighbouring residential dwellings and commercial premises throughout the construction phase
- Nearby residential properties and commercial premises to remain accessible at all times
- Works are to be undertaken during standard construction hours, 7am to 6pm Monday to Friday and 8am to 1pm Saturday.
- To facilitate public awareness and safety with regard to work in progress, signage identifying temporary beach access closure and machinery ahead will be posted at publicly accessible entrance points.

Other safeguards and management measures that will address socio-economic factors are addressed in Section 6.9.4, 6.10.4, and 6.13.4.

6.15 Cumulative impacts

6.15.1 Existing environment

The proposal will be conducted within a previously disturbed area due to the existing track and beach access.

6.15.2 Methodology

Locally occurring developments that could interact with the proposal were identified through a desktop search of publicly available information on the Department of Planning, Housing and Infrastructure major project register [Search: Shoalhaven City, Coastal Areas] and Shoalhaven City Council website [Search: Currarong]. The desktop search was carried out on 08 December 2023.

6.15.3 Potential impact

Construction

The proposal is not expected to have an adverse cumulative impact on any existing or planned developments within the surrounding locality.

Operation

The long-term effect of the proposal will have a positive impact on preserving Aboriginal heritage and quality of the track. The proposal will result in improved erosion control and safety for track users.

6.15.4 Mitigation measures

There are no additional mitigation measures to those already proposed throughout Section 6, and compiled in Section 8.1, required.

6.16 Impact on coastal processes and coastal hazards

6.16.1 Existing environment

In reference to s.2.10-11 of SEPP (Resilience and Hazards) 2021, utilising the [repealed] SEPP (Coastal Management) 2018 SEED Dataset mapping, identifies the study area as located within land mapped as Coastal Environment Area and Coastal Use Areas (Figure 11).

The proposed activity conducted within the area investigated will not have any adverse direct or indirect impact on the biophysical, hydrological or ecological integrity of the site; the proposal is designed to mitigate adverse influences on those features/items listed under Sections 2.10(1) and 2.11(1); as such, the proposed activity is not considered to contravene the objectives of SEPP (Resilience and Hazards) 2021.

No Coastal Wetland, Littoral Rainforest, or their proximity areas, are mapped within or near to the study area.

Pursuant to s.2.10(1)(c), the proposal is also located adjacent to the Jervis Bay Marine Park; this covering about 2400 km² of the continental shelf. It is located approximately eight nautical miles further offshore from the Jervis Bay Marine Park.

No estuaries are present within the study area.

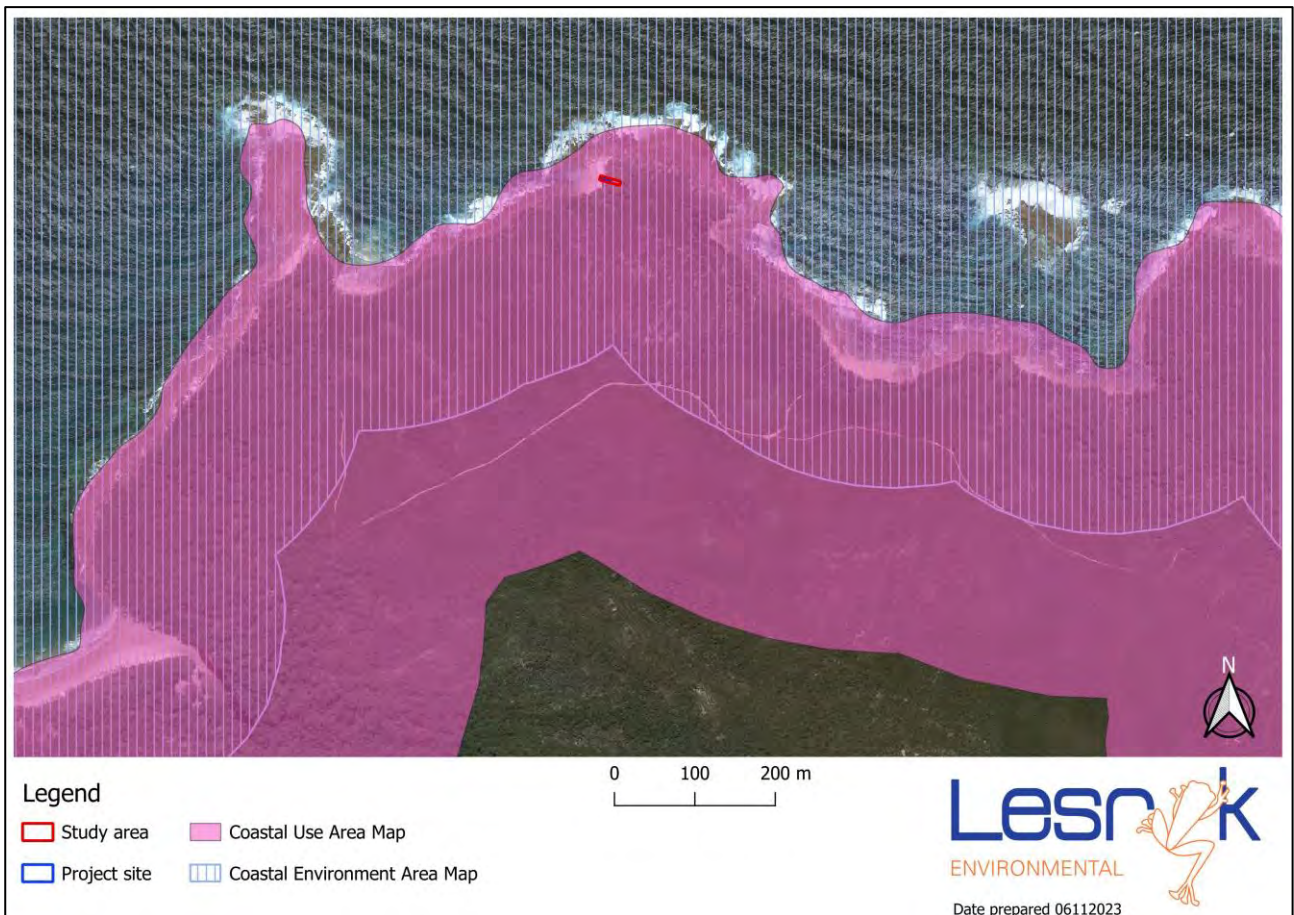


Figure 11 Coastal SEPP

6.16.2 Methodology

Reference to s.2.10-11 of the RHSEPP, utilising the Repealed - SEPP (Coastal Management) 2018 SEED Dataset mapping, identifies the study area as located within land mapped as Coastal Environment Area and Coastal Use Areas (Figure 11). It is acknowledged Crown Lands is both the proponent and consent authority.

Pursuant to s.2.10(1)(f) and s.2.11(1)(a)(iv), the proposal is to permit the remediation of an exposed Aboriginal shell midden (#58-2-0054). With reference to s.6.7.1 of the REF, and the ACHAR prepared for the proposal by Apex (2023a), an AHIP will be required to permit the proposed activity.

6.16.3 Potential impact

No activities that would remove natural communities and habitats that protect the coastline or increase exposure to the action of coastal processes will be undertaken. No infrastructure will be installed that alters wave energy and current patterns or tidal flows.

The proposed activity seeks to remediate the impacts of erosion on the potential Aboriginal shell midden, where the beach access is located. This will improve safety conditions for visitors, whilst protecting the midden from further degradation.

Sandbags have the potential to accumulate wrack, such as seaweed and debris, which could alter habitat for marine wildlife. As the sandbags are not located within the intertidal zone, the risk of this occurring is reduced.

Pending approval of the AHIP, the proposed activity would be conducted in accordance with recommendations provided in the AHIP (which would consider those presented within the ACHAR). Therefore, with regard to this, and provided the mitigation measures provided within this REF are implemented, the proposal is considered to be designed, sited and will be managed to avoid, minimise or mitigate adverse influences on those features/items listed under s.2.10(1) and 2.11(1); as such, the proposed activity is not considered to contravene the objectives of the RHSEPP.

Referencing the Jervis Bay Marine Park Zoning Map (Appendix 10), the study area is adjacent to a Habitat Protection Zone. As the proposal is terrestrial, it does not involve any of the identified activities allowed, prohibited or, pursuant to s.57 of the Marine Estate Management Act, that will require a Marine Parks permit. Provided the mitigation measures recommended within the REF are implemented, the proposal is not considered to cause an adverse impact on the water quality of the marine estate, in particular, the cumulative impacts of the proposed development on any of the sensitive coastal lakes identified in Schedule 1 of the RHSEPP.

6.16.4 Mitigation measures

The mitigation measures for coastal hazards or impacts that are proposed to be implemented as part of the proposed activity are as follows:

- Utilising sandbag and geotextile material which is least likely to leach and have an impact on marine species and communities.
- Regularly monitor and remove accumulated wrack to prevent habitat alteration.

6.17 Applicable strategic plans

Beyond those considered within this REF, particularly in Section 4, there are no additional applicable Strategic Plans.

6.18 Other relevant environmental factors

There are no additional environmental factors beyond those already considered within this REF.

7.0 Significance of impact

7.1 Section 171(2) environmental factors

Table 8 Factors to be considered

Section 171	Assessment outcome	Effect	REF Section Reference
(a) Any environmental impact on a community?	<p>Potential low, short-term/temporary noise, dust, emission, visual impact.</p> <p>Positive long-term impact on community safety and the preservation of Aboriginal heritage.</p> <p>Economic and groundwater impact is not applicable or negligible.</p>	Not significant	Refer to Sections 6.7, 6.9, 6.10, 6.13, 6.14
(b) Any transformation of a locality? (increased traffic, visitation)	The proposed activity will impact pedestrian access to site during construction. Once complete the remediation works will result in a long-term positive impact as the track and access will be fit for purpose.	Not significant	Refer to Section 6.11, 6.13, 6.14
(c) Any environmental impact on the ecosystems of the locality?	<p>The proposed activity has a disturbance footprint of 0.024 ha, and will not be removing native vegetation.</p> <p>No fauna habitats or PCT utilised by those species recorded or predicted to occur will be impacted by the scope of works proposed.</p>	Not significant	Refer to Section 6.6

Section 171	Assessment outcome	Effect	REF Section Reference
(d) Any reduction in a locality's aesthetic, recreational, scientific or other environmental quality or value?	<p>During the proposed activity there will be a short-term negative impact on aesthetic and recreational quality of Wilsons Beach due to the presence of the aircraft and machinery. However, once completed the remediation works will have a long-term positive impact on the locality with improved track quality and aesthetics of the track. This will increase the ability for use by the community and improve the tracks overall value.</p> <p>Reduced visibility of the Aboriginal shell midden will present a minor long-term negative impact on amenity values. However, should the midden remain unprotected, degradation will continue to occur through erosion impacts, thus losing its value entirely.</p>	Not significant	Refer to Section 6.7 and 6.13
(e) Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations?	<p>A long-term positive impact on Aboriginal cultural heritage will be experienced through the implementation of remediation works. This will allow for appreciation of the site for future generations.</p> <p>Implementation of the management measures outlined in Section 6.7.4 of the report will preserve the Aboriginal heritage within the site in a positive way as to protect them into the future.</p> <p>Implementation of the management measures outlined in Section 6.8.4 of the report will preserve the non-Aboriginal heritage of the site in a positive way as to protect values into the future.</p>	Not significant	Refer to Section 6.7, 6.8, 6.13.
(f) Any impact on the habitat of protected animals (within the meaning of the <i>Biodiversity Conservation Act 2016</i>)?	<p>Impacts to all native terrestrial species, including but not limited to threatened species, and their habitat requirements, as described in section 6.6 and assessed in Appendix 3 and 8.</p> <p>No long-term impacts, provided recommended mitigation measures are adopted, will be experienced as a result of the proposal.</p>	Not significant	Refer to Section 6.6 and Appendix 3 and 8.

Section 171	Assessment outcome	Effect	REF Section Reference
(g) Any endangering of any species of animal, plant or other form of life, whether living on land, in water or the air?	<p>Impacts to all listed terrestrial and aquatic species, and whether the proposal increases the impact of key threatening processes, as described in Section 6.6.</p> <p>No native vegetation removal is proposed.</p> <p>Assessments were undertaken for the threatened species identified during the site investigation. However, it has been assessed that the proposal is unlikely to significantly affect the species, or its habitats (Appendix 3).</p> <p>Provided recommended mitigation measures are adopted, the proposal is not considered to significantly contribute to, or increase the impact of, identified KTP.</p>	Not significant	Refer to Section 6.6 and Appendix 3
(h) Any long-term effects on the environment?	Positive long-term impact on Wilsons Beach access, reducing erosion potential of the sand bank containing the potential shell midden.	Not significant	Refer to Section 6.2, 6.4, 6.7, 6.8, 6.13, 6.14.
(i) Any degradation of the quality of the environment?	Not applicable; negligible to low; short-term and/or temporary.	Not significant	Refer to Section 6
(j) Any risk to the safety of the environment?	<p>Provided recommended mitigation measures are adopted, impacts are either negligible to low; short-term and/or temporary.</p> <p>The safety of the environment will be improved through an improved track surface for pedestrians and reduction in erosional impacts.</p>	Not significant	Refer to Section 6
(k) Any reduction in the range of beneficial uses of the environment?	<p>Low, short-term/temporary adverse impact including the presence of personnel, machinery and the aircraft, as well as access to the beach during construction.</p> <p>Positive long-term impact per access track remediation.</p>	Not significant	Refer to Section 6

Section 171	Assessment outcome	Effect	REF Section Reference
(l) Any pollution of the environment?	<p>Potential low short-term/temporary adverse impacts on air pollution, dust, and noise and vibration (including consideration of sensitive receptors) have been addressed above.</p> <p>No long-term impacts, provided recommended mitigation measures are adopted, will be experienced as a result of the proposal.</p>	Not significant	Refer to Section 6.3, 6.4, 6.9, 6.10, 6.12, 6.13
(m) Any environmental problems associated with the disposal of waste?	<p>Transportation, disposal and contamination impacts have been addressed in the relevant section.</p> <p>No long-term impacts, provided recommended mitigation measures are adopted, will be experienced as a result of the proposal.</p>	Not significant	Refer to Section 6.3 and 6.12
(n) Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply?	<p>No materials used for the proposed activity are in short supply. The proposal will not significantly increase demands on natural resources.</p>	Not significant	Refer to Section 6.12.3
(o) Any cumulative environmental effect with other existing or likely future activities?	<p>The negative synergisms with existing developments or future activities are considered in Section 15.</p> <p>The proposal will have negligible cumulative environmental impacts should mitigation measures throughout Section 6 be adopted.</p>	Not significant	Refer to Section 6.15
(p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions?	<p>The works will not have any impact with regards to this matter.</p>	Not significant	Refer to Section 6.16

Section 171	Assessment outcome	Effect	REF Section Reference
(q) Any applicable local strategic planning statements, regional strategic plans or district strategic plans made under Division 3.1 of the Act	The proposal will be consistent with the objectives, policies and actions identified in local, district and regional plans.	Not significant	Refer to Section 4 and 6.17
(r) Any other relevant environmental factors?	Not applicable.	Not significant	N/A

7.2 Matters of National Environmental Significance under Part 3, Division 1 of the *Environment Protection and Biodiversity Conservation Act 1999*

Factor	Impact
Any impact on a World or National Heritage place or property?	Not applicable
Any impact on a Ramsar wetland?	Not applicable
<p>Any impact on listed threatened species and communities?</p> <p>Ecological Assessments referencing the Significant Impact Guidelines prepared under the EPBC Act have been conducted (Appendix 3); this concluding that the proposal would not have a significant impact on the Eastern Bristlebird, its local population or habitat. This is primarily due to the fact that works would be undertaken in a previously disturbed and heavily eroded environment.</p> <p>As such, referral to the Federal Minister of the Environment is not required-</p>	<p>Minor (-)</p> <p>Assessments conducted (Appendix 3) have concluded the proposal would not have a significant impact on the threatened species identified.</p>
<p>Any impacts on listed migratory species?</p> <p>The White-bellied Sea-eagle identified is listed as Marine under the EPBC Act. However, the proposed work is not located within the Commonwealth marine area, and would not impact on foraging or breeding abilities of the species.</p> <p>Regardless, the works proposed will not affect any habitat utilised by this species for any component of its life cycle requirements.</p>	Negligible
Any impact on Commonwealth lands?	Not applicable
Any impact (direct or indirect, or cumulative) on a water resource in relation to coal seam gas development and large coal mining development	Not applicable

8.0 Environmental management

8.1 Summary of safeguards and mitigation measures

Below is a summary of the proposed mitigation measures as part of the proposed activity.

Table 9 Summary of Mitigation Measures

Environmental factor	Mitigation Measures
General	<ul style="list-style-type: none"> • Ecological assessments have been conducted in Appendix 3. • No clearing of native vegetation/plants will be undertaken to permit the scope of work. • Activities involving ‘hot work’ or requiring the use of an ignition source will cease during NSW RFS total fire bans. • Removed non-seed-bearing exotic vegetation will be mulched or re-used on-site, while weed contaminated green waste and any surplus spoil and other materials will be disposed of appropriately at a licensed landfill facility. • Vehicles transporting any exotic vegetation off site should ensure that their loads are covered. • Any native species injured (as a result of the work) are to be cared for by a local wildlife carer/veterinarian. <ul style="list-style-type: none"> – Once rehabilitated, these native animals must be released at their point of capture. • Any injured exotic species are to be taken to a local veterinarian for assessment. • The proposed activity has the potential to introduce the pathogen <i>Phytophthora cinnamomi</i>, which is associated with the dieback of native plant species. Work must avoid the potential spread of this organism as far as possible by adhering to the following hygiene protocols: <ul style="list-style-type: none"> – Before entering and leaving the work site, personnel are to remove excess soil and mud and then spray boots, tools, gloves and small equipment with recommended disinfectant supplied by the contractor (70% Methylated spirits / 30% Water) until runoff is clear. – Avoid unnecessary soil disturbance. • In relation to the remaining identified KTPs, these processes are extant along the investigated access track. The proposed activity is not expected to significantly contribute to, or increase the impact of, these KTPs.
Topography, Geology and Soils	<ul style="list-style-type: none"> • Implementation of an ESCP to be documented in the CEMP.
Contaminated Land	<ul style="list-style-type: none"> • Construction works be undertaken in accordance with a CEMP.

Environmental factor	Mitigation Measures
	<ul style="list-style-type: none"> • Should associated machinery/ equipment require re-fuelling, this would occur within a bunded area at a minimum 50 m from any waterbody or drainage line. • Vehicles will be serviced and operate within standard TfNSW guidelines. • Machinery will be serviced, regularly maintained and operated within current guidelines. • Work is to be conducted during those periods when high winds are not predicted. • Where possible, construction wastes will be recycled or reused. • Other waste will be disposed to authorised waste facilities. • A terrestrial spill kit must be maintained on site at all times. The type and nature of the kit must be commensurate to the type and quantity of any hazardous material used on site.
Water Quality and Hydrology	<ul style="list-style-type: none"> • Mitigation measures will be implemented in accordance with the proposed activities procedures documented in a CEMP. They will include appropriate surface water mitigation measures to minimise impacts and the preparation of an erosion and sedimentation plan. • Erosion and sediment controls designed in accordance with the Blue Book. • Erosion and sediment control measures implemented before construction at any stockpiles or work areas to avoid impacts to waterways via stormwater runoff. • Erosion and sedimentation measures to be checked and maintained regularly, and records kept and provided on request. • Erosion and sediment control measures not being removed until the works are complete and areas are stabilised. • Water quality control measures are to be used to prevent any materials (e.g. concrete, grout, sediment) from entering waterways. • No release of dirty water into drainage lines or waterways. • Stockpiles will be located at least 50 m away from waterways, roads, slopes steeper than 10 percent, and areas of concentrated water flow. • Work will be programmed to coincide with periods of dry weather. • Where required, stockpile sites will be kept to previously cleared, disturbed areas
Groundwater	<ul style="list-style-type: none"> • No groundwater will be encountered during the proposed activities as no excavation or release of water would be undertaken.

Environmental factor	Mitigation Measures
Ecology	<ul style="list-style-type: none"> • Vegetation to be retained should be clearly marked and/or temporarily fenced before the commencement of construction works. • If additional clearing works are required, these will be subject to additional ecological inspections and assessment. • Ensure that machinery is free of weed material before entering and exiting the works area to avoid introducing or spreading weed species. • The occurrences of Asparagus Fern (<i>Asparagus aethiopicus</i>) present near the works site should be hand removed and disposed of at an appropriate waste facility. • Erosion and sediment control measures should be implemented around the works area and any associated stockpiles to avoid impacts to waterways via stormwater runoff. • If unexpected threatened fauna or flora species are discovered, stop works immediately and contact the Project Manager. • Ensure the aircraft hovers over the site whilst delivering materials, with the landing site located offsite on an already established landing pad.
Aboriginal Archaeology	<p>The mitigation measures for impacts on Aboriginal archaeology that are proposed to be implemented as part of the proposed activity by Apex (2023a) are as follows:</p> <ul style="list-style-type: none"> • Recommendation 1 <ul style="list-style-type: none"> - Obtain an Aboriginal Heritage Impact Permit (AHIP) to permit rectification works to occur in the vicinity of the exposed shell deposit. - Cover project site in geotextile fabric before sandbags and fill are placed, to ensure no further impact to heritage occurs to this location. - Conduct minor drainage works to direct waterflow away from the access track. • Recommendation 2 <ul style="list-style-type: none"> - Maintain valid Aboriginal Community Consultation, including notification to RAPs when the AHIP application is lodged and in the event that it is issued. • Recommendation 3 <ul style="list-style-type: none"> - Contain the proposed activity within the assessed boundary for the proposal. - Further investigation of areas which have not been assessed should be completed in the event alteration to the currently assessed boundaries occurs. • Recommendation 4 <ul style="list-style-type: none"> - If an Aboriginal object is identified whilst carrying out the activity within the study area, all activities in the immediate vicinity of the identified Aboriginal object will cease, and a suitably qualified

Environmental factor	Mitigation Measures
	<p>archaeologist should be contacted to confirm the validity of the object. Objects that are confirmed to be of Aboriginal cultural origin must be reported to Heritage NSW.</p> <ul style="list-style-type: none"> - In the unlikely event that suspected human remains are identified during remediation works, all activity in the vicinity of the find must cease immediately and the find protected from harm or damage. The NSW police and Coroner’s office must be notified immediately. If the finds are confirmed to be of Aboriginal human origin, a suitably qualified archaeologist, in consultation with Heritage NSW and the project RAPs, would be necessary. • Recommendation 5 - A digital copy of the ACHAR report should be forwarded to Heritage NSW to support the AHIP application and for inclusion on the AHIMS. - A copy of the ACHAR should be forwarded to the RAPs for the project.
Non-Aboriginal Archaeology	<ul style="list-style-type: none"> • If previously unknown historical, archaeological material or heritage items are discovered during the proposed activity, all work in the area of the item(s) shall cease immediately. The Project Manager will contact Heritage NSW and engage a qualified heritage consultant, in accordance with section 146 of the <i>Heritage Act</i>, to determine an appropriate course of action before the recommencement of work in the vicinity of the item.
Noise and Vibration	<ul style="list-style-type: none"> • All works must be undertaken in accordance with construction noise guidelines. • Nearby sensitive receivers must be notified regarding the commencement and duration of construction activities. • Nearby residents and businesses must be made aware of the contact details of the complaints handling system. • All works will be undertaken during standard construction hours, Monday to Friday, 7am to 6pm and Saturday, 8am to 1pm OR where practical, undertake the disruptive works (those causing the most significant noise and vibration impacts) during the standard work hours. • Turn off machinery that is not being used. • Examine and implement, where feasible and reasonable, alternative work practices which generate less noise or vibration impacts. • Ensure plant is regularly maintained, and repair or replace equipment that becomes noisy or causes excessive vibration impacts. • All employees and contractors should receive an environmental induction before the commencement of work. The induction should include but not be limited to:

Environmental factor	Mitigation Measures
	<ul style="list-style-type: none"> - relevant project-specific and standard noise and vibration mitigation measures - permissible hours of work - location of nearest sensitive receivers. • Keep vehicle drivers informed of designated vehicle routes, parking locations, acceptable delivery hours or other relevant practices (for example, minimising the use of engine brakes and no extended periods of engine idling). Avoid the use of radios or stereos outdoors where neighbours can be affected. • Regularly train personnel and contractors (such as at toolbox talks) to use equipment in ways to minimise noise.
Air Quality	<ul style="list-style-type: none"> • Air quality mitigation strategies must be prepared and implemented as part of the CEMP. • Potential dust impact generated from activities (e.g., angle grinding) will be monitored (e.g. to ensure it is not reducing visibility). If dust impact is more than is manageable, work will stop and the work method reviewed. • Exposed areas must be restricted to the smallest extent possible and for as short a time as possible. • Dust suppression must be maintained throughout the duration of the proposed activity. • Adjust the intensity of the activities according to the weather conditions. • Where possible, minimise the extent of loose materials stockpiled at the site. • Position stockpiling areas away from drainage lines and cover or stabilise them if in place for longer than 10 days. • Machinery, aircrafts and equipment must be inspected before the commencement of works on site. • Machinery, plant and equipment used in construction must be maintained to appropriate operating standards, with regular inspections to ensure that it continues to operate efficiently. • Ensure personnel are wearing appropriate Personal Protective Equipment (PPE), such as respiratory protection, to prevent the inhalation of grinding dust while utilising the angle grinder. • Machinery must not be left idling or running when not in use. • All land disturbed by earthworks will be stabilised before the decommissioning of the study area.
Traffic and Transport	<ul style="list-style-type: none"> • Detail the specific traffic mitigation measures within the CEMP and consult with local residences and businesses. • Erect signage to inform and redirect pedestrian movements during construction. • Works must be coordinated around the busy holiday period to minimise the disruption to local residents and tourists visiting the area.

Environmental factor	Mitigation Measures
	<ul style="list-style-type: none"> • Establish scheduled flight operations, including flight routes and detour plans, to allow for better coordination with existing ground transportation schedules, reducing conflicts and disruptions. • Avoid aircraft use during peak hours to minimise disruptions and conflicts associated with heavy pedestrian or vehicular traffic. • Develop and communicate clear emergency response and contingency plans to address unexpected situations or disruptions to traffic flow caused by aircraft operations. • Define access control zones around landing sites to regulate and communicate restrictions during aircraft activities.
Waste	<ul style="list-style-type: none"> • A Waste Management Plan will be prepared as part of the CEMP, including the following control measures: <ul style="list-style-type: none"> - Waste will be classified before being disposed to an appropriately licenced facility in accordance with Waste Classification Guidelines: Part 1 Classifying Waste (EPA 2014). - All waste from the demolition will be transferred by a licenced contractor to a licenced receiving facility in accordance with EPA Waste Classification Guidelines. Where necessary, this will include sampling and analysis. - Vehicles that are transporting materials will comply with Transport for NSW standards (i.e., loads covered and complying with designated speed limits). - Spill management as noted in 9.1(5). - Visual inspection of site post-completion of the work to ensure the area is clean. • Any excess construction or demolition material will be disposed of at an appropriately licensed facility. • Consider the use of dust suppressants to bind dust particles, or implement barriers, to minimise dispersion of dust. • Waste generated by the proposed activity will be recycled as a first preference. However, the handling, transport and disposal/re-use of materials should be undertaken in accordance with regulatory and statutory requirements. • Construction works to be undertaken in accordance with a CEMP. • Ongoing maintenance and monitoring to be conducted for the site.
Visual Amenity	<ul style="list-style-type: none"> • The site, including the site compound, will be kept in an orderly state throughout the period of the proposed activity. • The work site and any adjacent areas will be cleared of all materials and refuse on completion of the proposed activity. • The work site will be restored to be as close to the original state as possible upon completion of the proposed activity.
Socio-Economic	<ul style="list-style-type: none"> • undertake consultation with neighbouring residential dwellings and commercial premises throughout the construction phase

Environmental factor	Mitigation Measures
	<ul style="list-style-type: none"> • Nearby residential properties and commercial premises to remain accessible at all times • Works are to be undertaken during standard construction hours, 7am to 6pm Monday to Friday and 8am to 1pm Saturday. • To facilitate public awareness and safety with regard to work in progress, signage identifying temporary beach access closure and machinery ahead will be posted at publicly accessible entrance points. • Other safeguards and management measures that will address socio-economic factors are addressed in Section 6.9.4, 6.10.4, and 6.13.4.
Cumulative	<ul style="list-style-type: none"> • There are no additional mitigation measures to those already proposed throughout Section 6, and compiled in Section 8.1, required.
Coastal Processes and Hazards	<ul style="list-style-type: none"> • Utilising sandbag and geotextile material which is least likely to leach and have an impact on marine species and communities. • Regularly monitor and remove accumulated wrack to prevent habitat alteration.
Local, District or Regional Strategic Plans	Not applicable.
Other Relevant Environmental Factors	Not applicable.

8.2 Other approvals

An Aboriginal Heritage Impact Permit (AHIP) will be acquired before the proposed activity begins.

9.0 Publication checklist

The *Environmental Planning and Assessment Regulation 2021* (clause 171(4)) requires publication for an activity in the following circumstances [*Check whichever applies*]

the activity has a capital investment value of more than \$5 million

The activity requires an approval or a permit under

section 144 of the *Fisheries Management Act 1994*

section 201 of the *Fisheries Management Act 1994*

section 205 of the *Fisheries Management Act 1994*

section 219 of the *Fisheries Management Act 1994*

The activity requires an approval or a permit under

section 57 of the *Heritage Act 1977*

The activity requires an approval or a permit under

section 90 of the *National Parks and Wildlife Act 1974*

The activity requires an approval or a permit under

section 47 of the *Protection of the Environment Operations Act 1997*

section 48 of the *Protection of the Environment Operations Act 1997*

section 49 of the *Protection of the Environment Operations Act 1997*

section 122 of the *Protection of the Environment Operations Act 1997*

it is considered to be in the public interest³ to publish on the following grounds:

If publication is required, contact the LAM Project and Reporting Team for assistance at LAM.projects@crowland.nsw.gov.au

³ Refer to the REF Policy and Procedure document for guidance on what constitutes the public interest

10.0 Conclusion

Satisfactory

The environmental impacts are acceptable, and the proposal is recommended for approval without any special conditions

The environmental impacts are acceptable, and the proposal is recommended for approval with the following special conditions:

- N/A

Further information required

The proposed activity is likely to significantly affect the environment – an EIS is required

The proposed activity is likely to significantly affect threatened species, populations, ecological communities or their habitats – a Species Impact Statement is required

The proposed activity is on land that is or is part of critical habitat – Species Impact Statement is required

Unsatisfactory

The environmental impact of the proposed activity is considered unacceptable, and therefore, the proposal is recommended for refusal

Signature: 

Name: Michael Murphy

Position: Senior Project Officer - Assets

Date: 30/01/2024

11.0 Declaration

This Review of Environmental Factors provides a true and fair review of the proposed activity in relation to its likely impacts on the environment. In considering the proposed activity, this assessment has examined and taken into account, to the fullest extent possible, all matters affecting or likely to affect the environment by reason of that activity.

I certify that I have reviewed and endorsed the contents of this REF document, and to the best of my knowledge, it is in accordance with the EP&A Act, the EP&A Regulation and the Guidelines approved under section 170 of the EP&A Regulation and the information it contains is neither false nor misleading.

Signed: *Graham Paull*

Name: Graham Paull

Position: acting Manager Built Assets

Date: 30/01/2024

Delegated officer under clause 8.4 of the Crown Land Ministerial Instrument of Delegation 2022 ([Crown-Lands-Consolidated-Delegation-Schedules-10-May-2022.pdf](#))




Delegate Groups A – E*

*Group E delegates can only exercise environmental impact assessment functions in relation to any proposed activity that comprises a bush fire hazard reduction work consistent with any bush fire management plan in force under the *Rural Fires Act 1997* (NSW)

Project Controls

Project Name	Wilson's Beach, Abrahams Bosom Reserve, Currarong NSW
Proponent	Crown Lands
Project Manager	Michael Murphy
REF Author	Lesryk Environmental Pty Ltd
CM9 Reference	

Approvals

Version	Date	Name	Role	Signature
1.0	10/01/2024	Deryk Engel	Peer Review	
1.1	17/01/2024	Bryan Pollock	Project Manager	
1.2	30/01/2024	Graham Paull	Approving Officer*	

*Delegated officer under clause 8.4 of the Crown Land Ministerial Instrument of Delegation 2022 ([Crown-Lands-Consolidated-Delegation-Schedules-10-May-2022.pdf](#))

Delegate Groups A – E*

*Group E delegates can only exercise environmental impact assessment functions in relation to any proposed activity that comprises a bush fire hazard reduction work consistent with any bush fire management plan in force under the *Rural Fires Act 1997* (NSW)

12.0 Bibliography

Apex Archaeology 2023a, *Wilsons Beach, Currarong, NSW – Aboriginal Cultural Heritage Assessment Report*. Report prepared for Crown Lands – Department of Planning and Environment⁴.

– 2023b, *Wilsons Beach, Currarong, NSW – Archaeological Report*. Report prepared for Crown Lands – Department of Planning and Environment⁵.

Australian Earth Science Education 2020, *Soil Reading*, viewed November 2023.

Briggs, J and Leigh, J 1996, *Rare or Threatened Australian Plants*, CSIRO Publishing, Collingwood, Victoria.

Bureau of Meteorology (BoM) 2023a, *Bureau of Meteorology Climate Averages*, viewed October 2023

2023b, *Groundwater Dependent Ecosystems*, viewed October 2023

Cogger, HG 2014, *Reptiles and amphibians of Australia*, Seventh Edition, CSIRO, Collingwood, Victoria

Commonwealth of Australia 2002, *Style Manual 6th Edition*, John Wiley and Sons Australia Ltd, Richmond, Victoria

Cropper, S 1993, *Management of Endangered Plants*, CSIRO, Melbourne, Victoria.

Department of Climate Change, Energy, the Environment and Water 2023a, Protected Matters Search Tool, viewed October 2023

– 2023b, *Species profile and threats database*, viewed November 2023

– 2023c, *Register of Critical Habitat*, viewed November 2023

– 2023d, *Australian Heritage Database*, viewed November 2023

Department of the Environment 2013, *Matters of National Environmental Significance: Significant impact guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999*, viewed October 2023

Department of Environment, Climate Change and Water 2010, *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*, viewed November 2023.

Department of Environment and Conservation 2004, *Threatened Species Survey and Assessment: Guidelines for developments and activities* (working draft), New South Wales Department of Environment and Conservation, Hurstville, NSW

Department of the Environment, Water, Heritage and the Arts 2010, *Survey guidelines for Australia's threatened birds: Guidelines for detecting birds listed as threatened under the EPBC Act*. Commonwealth of Australia, Barton, ACT.

Department of Planning and Environment 2010, *Catchment Boundaries of New South Wales* [SEED Database], accessed December 2023.

⁴ The Department of Planning and Environment – Crown Lands has changed its name to the Department of Planning, Housing and Infrastructure since the finalisation of this report.

⁵ See Note 4 above.

- 2023, Coastal Crown Land Guidelines, viewed December 2023

Department of Planning, Housing and Infrastructure 2021, Illawarra Shoalhaven Regional Plan 2041, viewed December 2023

Department of Primary Industries 2013, Policy and guidelines for fish habitat conservation and management (2013 update), viewed December 2023

- 2016, Water Sharing Plan for the South Coast Groundwater Sources : background document, NSW Department of Primary Industries Water, [Parramatta, N.S.W.], viewed December 2023.

- N.d., Marine Protected Areas, viewed December 2023.

- 2023a, NSW WeedWise: Priority weeds for the South East (including Shoalhaven LGA), viewed December 2023.

- 2023b, Fisheries Spatial Data Portal – Key Fish Habitat (Search: Southern Rivers), viewed December 2023.

Frith, HJ (Ed) 2007, Complete book of Australian birds, Readers Digest, Surry Hills, NSW.

Harden, G (Ed) 1992-2002, Flora of New South Wales Vols 1,2,3 and 4, NSW University Press, Kensington, NSW.

Landcom 2004, Managing Urban Stormwater: Soils and Construction, ('Blue Book') volume 1, 4th edition, Sydney, viewed December 2023

Local Land Services 2022, South East Regional Strategic Weed Management Plan 2023- 2027, State of New South Wales through Local Land Services.

Keith, D 2004, Ocean Shores to Desert Dunes; the native vegetation of New South Wales and the ACT, NSW National Parks & Wildlife Service, Sydney.

National Native Title Tribunal 2022a, Native Title Vision, viewed December 2023.

- 2022b, Search Register of Native Title Claims [search: Shoalhaven City Council], viewed December 2023.

NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) 2023a, BioNet Atlas, data downloaded October 2023

- 2023b, Area of Outstanding Biodiversity Value register, viewed October 2023.

NSW Environmental Protection Authority 2014, Waste Classification Guidelines Part 1: Classifying waste, viewed October 2023

- 2017, NSW Noise Policy for Industry, viewed October 2023

- 2020, Draft Construction Noise Guideline; viewed October 2023

- 2023, Contaminated land record of notices, viewed November 2023.

NSW Government 2020, State Strategic Plan – A Vision for Crown Land, viewed December 2023

- 2023a, NSW Planning Portal Spatial Viewer, accessed December 2023.

- 2023b, Shoalhaven Local Environmental Plan 2012, viewed December 2023.

- 2023c, SEED map viewer, accessed December 2023.

- 2023d, State Heritage Inventory, accessed December 2023.

- 2023e, Major Projects, viewed December 2023
- NSW Planning, Industry & Environment 2023, eSPADE v2.2 – Soil Classification, viewed November 2023.
- NSW Soil and Land Information System 1999, Soil Profile Report – Profile 37, viewed November 2023.
- Nutley, D and Smith, T 1992, s.s Merimbula Wreck Report, Department of Planning, Sydney, viewed December 2023.
- Office of Environment and Heritage 2022, Threatened biodiversity profile search, viewed November 2023
- 2012. National Recovery Plan for Eastern Bristlebird *Dasyornis brachypterus*. Office of Environment and Heritage, Department of Premier and Cabinet (NSW), Sydney.
- Serov P, Kuginis L, Williams J.P. 2012, Risk assessment guidelines for groundwater dependent ecosystems, Volume 1 – The conceptual framework, NSW Department of Primary Industries, Office of Water, Sydney. Viewed December 2023
- Shoalhaven City Council 2020, Shoalhaven 2040: Our Strategic Land-use Planning Statement, viewed December 2023
- N.d, Major Projects & Works, viewed December 2023.
- 2022, Shoalhaven 2023 Community Strategic Plan, viewed December 2023
- Simpson, K and Day, N 2010, Field guide to the birds of Australia, 8th Edition, Penguin Books Australia, Victoria
- State Government of NSW and Department of Planning and Environment 2010, NPWS Fire History – Wildfires and Prescribed Burns [SEED Dataset], viewed December 2023
- 2017, Environmental Planning Instrument – Salinity [SEED Dataset], viewed November 2023.
- 2022, NSW State Vegetation Type Map [SEED Dataset], viewed November 2023.
- 2023a, Environmental Planning Instrument - Acid Sulfate Soils [SEED Dataset], viewed November 2023.
- 2023b, State Environmental Planning Policy (Coastal Management) 2018 [SEED Dataset], viewed November 2023.
- State Government of NSW and NSW Rural Fire Service 2023, NSW Bush Fire Prone Land, viewed November 2023.
- State of NSW through NSW Department of Primary Industries 2006, Threatened species assessment guidelines: The assessment of significance, viewed November 2023.
- State of NSW and Office of Environment and Heritage 2018, Threatened Species Test of Significance Guidelines, viewed November 2023.
- State of NSW through Regional NSW 2023, MinView – Stratigraphic Units, viewed October 2023.
- Triggs, B 1996, Tracks, scats and other traces: A field guide to Australian mammals, Oxford University Press, Melbourne, Victoria

Van Dyck, S. and Strahan, R. (Eds) 2008, *The Mammals of Australia (3rd edition)*, Reed New Holland, Sydney, NSW.

Weeds Australia 2022, *Weeds of National Significance*, viewed December 2023.

Appendix 1. ACHAR

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WILSONS BEACH, CURRARONG, NSW

ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT

Report to Crown Lands,
Department of Planning and Environment

LGA: Shoalhaven

September 2023





EXECUTIVE SUMMARY

Apex Archaeology have been engaged by Crown Lands, Department of Planning and Environment to assist in preparing an Aboriginal Cultural Heritage Assessment (ACHA) for proposed mitigation works at Wilsons Beach, within Abrahams Bosom Reserve, Currarong. The project is located within part of Lot 7004 DP1030104 and is within the Shoalhaven Local Government Area (LGA).

This ACHA has been prepared in accordance with the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (April 2011); the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW, April 2010) (the ACHCRs). A separate Archaeological Report (AR) detailing the results of the assessment prepared in line with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (September 2010) (the Code of Practice) is attached as an appendix to this report.

The study area comprises an approximate 5 x 20m corridor along Abrahams Bosom Walking Track, extending onto Wilsons Beach. The site is located within a registered shell midden deposit.

The shell midden is registered on the Aboriginal Heritage Management Services (AHIMS) as AHIMS #58-2-0054 (Crookhaven Bight; Honeysuckle Point) and is located at the end of a walking track that accesses Wilsons Beach. The area has been partially washed out following significant rainfall events, and requires mitigation measures to prevent further impact. An Aboriginal Heritage Impact Permit (AHIP) is required to allow these remediation works to be undertaken. As such, an ACHA is necessary to inform the AHIP application.

A total of ten Aboriginal people and organisations registered an interest in being consulted for the project. The following list comprises the registered Aboriginal parties (RAPs) for the project:

- Djirringani Elders
- Gumaraa Aboriginal Experience Pty Ltd
- Guntawang Aboriginal Resources
- Jerrinja Local Aboriginal Land Council (LALC)
- Kamilaroi Yankunytjatjara Working Group
- Murrabidgee Mullangari
- Raw Cultural Healing
- South Coast People (registered Native title Claimants)
- Sonione Wagabut Rogers Wingarra Wilay

Consultation with the RAPs has been conducted in accordance with the ACHCRs.

A site inspection of the area was undertaken by Leigh and Jenni Bate on 9 June 2023. Jerrinja LALC were invited to participate in the survey but were unable to attend on the day. Assessment of the shell deposit identified that it consisted of small shells of a range of species, both fragmentary and whole, that were intermixed with grey and



yellow sand, and recent shell washed in by the tides. There was no evidence of any Aboriginal stone artefacts, animal bones, charcoal fragments, or other features suggesting it was associated with Aboriginal activity within the area.

However, it is not possible to definitively state that the shell deposit is or is not Aboriginal in origin. Given the site is registered on AHIMS as an Aboriginal shell midden, the exposed area of shell must be managed appropriately. As such, the following recommendations have been made for the project:

RECOMMENDATION 1: APPLICATION FOR AHIP REQUIRED

An application should be made to Heritage NSW for an AHIP to permit rectification works to occur in the vicinity of the exposed shell deposit, AHIMS site #58-2-0054. This area should be covered with geofabric or similar textile, and covered with fill (clean sand or similar) to ensure no further impact occurs to this location. Sandbags should be placed on top of geofabric in areas requiring significant remediation to ensure stabilisation of the area. Minor drainage works are also necessary to direct water flow away from the access track and prevent further washout occurring.

RECOMMENDATION 2: MAINTAIN ABORIGINAL COMMUNITY CONSULTATION

Consultation with the RAPs regarding the project should continue, in order to keep the RAPs informed about the management of Aboriginal cultural heritage within the study area. This includes notifying the RAPs when an AHIP application is lodged, and also in the event an AHIP is issued.

Consultation undertaken for this project must be maintained at least every six months in order to maintain validity. It is the Proponent's responsibility to ensure consultation remains valid. In the event a gap of more than six months occurs between consultation events, it may be necessary to restart the consultation process to support any AHIP applications that are necessary.

RECOMMENDATION 3: WORKS BOUNDARIES

The proposed remediation works must be contained within the assessed boundary for this project. If there is any alteration to the boundaries of the proposed remediation works to include additional areas not assessed as part of this archaeological investigation, further investigation of those areas should be completed to assist in managing Aboriginal objects and places which may be present in an appropriate manner.

RECOMMENDATION 4: STOP WORK PROVISION

Should unanticipated Aboriginal archaeological material be encountered during site works, all work must cease in the vicinity of the find and an archaeologist contacted to make an assessment of the find and to advise on the course of action to be taken. Further archaeological assessment and Aboriginal community consultation may be required prior to the recommencement of works. Any objects confirmed to be Aboriginal in origin must be reported to Heritage NSW.



Human remains of Aboriginal people have previously been recorded in shell middens within rockshelters within Beecroft Peninsula, and within sand dune deposits in Jervis Bay. In the unlikely event that suspected human remains are identified during rectification works, all activity in the vicinity of the find must cease immediately and the find protected from harm or damage. The NSW Police and the Coroner's Office must be notified immediately. If the finds are confirmed to be human and of Aboriginal origin, further assessment by an archaeologist experienced in the assessment of human remains and consultation with both Heritage NSW and the RAPs for the project would be necessary.

RECOMMENDATION 5: REPORTING

One digital copy of this report should be forwarded to Heritage NSW to support the required AHIP application for the project, along with required supporting documentation.

One digital copy of this report should be forwarded to Heritage NSW for inclusion on the Aboriginal Heritage Information Management System (AHIMS).

One copy of this report should be forwarded to each of the registered Aboriginal stakeholders for the project.



Apex Archaeology acknowledges and pays respect to the past, present and future Traditional Custodians and Elders of this nation and in whose land this assessment took place, and to the continuation of cultural, spiritual and educational practices of Aboriginal and Torres Strait Islander peoples.

DOCUMENT CONTROL

The following register documents the development and issue of the document entitled 'Wilsons Beach, Currarong, NSW: Aboriginal Cultural Heritage Assessment Report', prepared by Apex Archaeology in accordance with its quality management system.

Revision	Prepared by	Reviewed by	Comment	Issue Date
1 – Draft	Rebecca Bryant & Jenni Bate	Leigh Bate	Client review	8 July 2023
2 – Draft	Jenni Bate	Crown Lands	RAP review	3 August 2023
3 – Final	Jenni Bate	RAPs	Issue of final	6 Sept 2023



GLOSSARY OF TERMS

Aboriginal Object	An object relating to the Aboriginal habitation of NSW (as defined in the NPW Act), which may comprise a deposit, object or material evidence, including Aboriginal human remains.
ACHA	Aboriginal Cultural Heritage Assessment
ACHAR	Aboriginal Cultural Heritage Assessment Report
ACHCRs	<i>Aboriginal cultural heritage consultation requirements for proponents 2010</i>
AHIMS	Aboriginal Heritage Information Management System maintained by Heritage NSW, detailing known and registered Aboriginal archaeological sites within NSW
AHIP	Aboriginal Heritage Impact Permit
ASIRF	Aboriginal Site Impact Recording Form
BP	Before Present, defined as before 1 January 1950.
Code of Practice	The DECCW September 2010 <i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i>
Consultation	Aboriginal community consultation in accordance with the DECCW April 2010 <i>Aboriginal cultural heritage consultation requirements for proponents 2010</i> .
DA	Development Application
DECCW	The Department of Environment, Climate Change and Water (now Heritage NSW)
Disturbed Land	If land has been subject to previous human activity which has changed the land's surface and are clear and observable, then that land is considered to be disturbed
Due Diligence	Taking reasonable and practical steps to determine the potential for an activity to harm Aboriginal objects under the <i>National Parks and Wildlife Act 1974</i> and whether an application for an AHIP is required prior to commencement of any site works, and determining the steps to be taken to avoid harm
Due Diligence Code of Practice	The DECCW Sept 2010 <i>Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales</i>
GIS	Geographical Information Systems
GSV	Ground Surface Visibility
Harm	To destroy, deface or damage an Aboriginal object; to move an object from land on which it is situated, or to cause or permit an object to be harmed
Heritage NSW	Heritage NSW within the Department of Premier and Cabinet; responsible for overseeing heritage matters within NSW
ka	Kiloannus, a unit of time equating to 1,000 years
LALC	Local Aboriginal Land Council
LGA	Local Government Area
NPW Act	<i>NSW National Parks and Wildlife Act 1974</i>
NPWS	National Parks and Wildlife Service
OEH	The Office of Environment and Heritage of the NSW Department of Premier and Cabinet (now Heritage NSW)
PAD	Potential Archaeological Deposit
RAPs	Registered Aboriginal Parties



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1.0 INTRODUCTION

Apex Archaeology have been engaged by Crown Lands, Department of Planning and Environment to assist in preparing an Aboriginal Cultural Heritage Assessment (ACHA) for proposed mitigation works at Wilsons Beach, within Abrahams Bosom Reserve, Currarong. The project is located within part of Lot 7004 DP1030104 and is within the Shoalhaven LGA.

This report has been prepared in accordance with the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (April 2011); the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW, April 2010) (the ACHCRs); and the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (September 2010) (the Code of Practice).

An Aboriginal Heritage Impact Permit (AHIP) is required to allow these remediation works to be undertaken. As such, an ACHA is necessary to inform the AHIP application.

1.1 PROJECT PROPONENT

The proponent for the project is Crowns Lands, Department of Planning and Environment. The client contact for the project was Bryan Pollock, Project Officer – Crown Land Built Assets.

1.2 STUDY AREA AND PROJECT BRIEF

The study area is located at Wilsons Beach that is within part of Lot 7004 DP1030104 within Abrahams Bosom Reserve in Currarong, NSW. Currarong is located on the northern side of the Beecroft Peninsula that also forms the northern headland of Jervis Bay (Figure 1 and Figure 2). The study area is located approximately 25 km southeast of Nowra. It comprises an area of approximately 20m x 5m and is bound by the beach foreshore bordering the Crookhaven Bite to the west, and sand dunes to the north, south and west.

The area of exposed shell deposit requires rehabilitation in order to prevent further erosion. This will also assist in protecting any potential cultural shell midden behind the exposed area. As such, the only work that is proposed to be undertaken is to aid in the rehabilitation and remediation of the area containing the exposed shell. It is proposed to cover this with geofabric or similar textile, along with introduced fill, and to plant out the area with *Lomandra longifolia* to protect the shell deposit from any further impact.

The subject land is within the Crown Lands, which is managed by the Department of Planning and Environment.



1.3 STATUTORY CONTEXT

Heritage in Australia, including both Aboriginal and non-Aboriginal heritage, is protected and managed under several different Acts. The following section presents a summary of the applicable Acts which provide protection to cultural heritage within NSW

1.3.1 NATIONAL PARKS AND WILDLIFE ACT 1974

The *National Parks and Wildlife Act 1974* provides protection for all Aboriginal objects and places within NSW. Aboriginal objects are defined as the material evidence of the Aboriginal occupation of NSW, while Aboriginal Places are defined as areas of cultural significance to the Aboriginal community. All Aboriginal objects are protected equally under the Act, regardless of their level of significance. Aboriginal Places are gazetted if the Minister is satisfied that the location was and/or is of special significance to Aboriginal people.

Following amendments to the NPW Act in 2010, approval to impact Aboriginal cultural heritage sites is only granted under a Section 90 AHIP, which is granted by Heritage NSW in the Department of Premier and Cabinet.

1.3.2 NSW NATIONAL PARKS AND WILDLIFE REGULATION 2019

Part 5, Division 2 of the *National Parks and Wildlife Regulation 2019* addresses Aboriginal objects and places in relation to the NPW Act 1974, and outlines how compliance with relevant codes of practice can be met.

Clause 58(1) outlines the defence of low impact acts or omissions to the offence of harming Aboriginal objects, which includes maintenance works on existing roads and fire trails, farming and land management work, grazing of animals, activities on land that has been disturbed that is exempt or complying development, mining exploration work, removal of vegetation (aside from Aboriginal culturally modified trees), seismic surveying or groundwater monitoring bores on disturbed ground, or environmental rehabilitation work (aside from erosion control or soil conservation works such as contour banks).

Clause 58(4) outlines the definition of 'disturbed land', as land that "has been the subject of a human activity that has changed the land's surface, being changes that remain clear and observable".

Clause 59 relates to the notification of Aboriginal objects and sites and Clause 60 relates to the requirements for the consultation process to support an AHIP application. The regulation sets out the requirements broadly in line with those outlined in the ACHCRs.



Figure 1: Study area within its regional context.



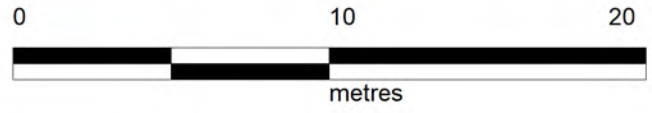


Study Area



Lot Boundaries

Wilson's Beach



Projection:
MGA Zone 56 (GDA 94)
Base Map:
Near Maps 2023
Image Date:
27/05/2023
Final - Version 1

Figure 2: Study area within its local context.





1.4 OBJECTIVES OF THE ABORIGINAL CULTURAL HERITAGE ASSESSMENT

The archaeological investigation was undertaken to meet the requirements of the Code of Practice and ACHCRs.

The purpose of the archaeological investigation is to understand and establish the potential harm the proposed development may have on Aboriginal cultural heritage within the study area, both tangible and intangible.

Aboriginal community consultation was undertaken for the project with the aim of:

- Identifying the Aboriginal community members who can speak for Country within which the study area is located;
- Involving the Aboriginal community in making decisions about the management of their cultural heritage;
- Identifying, assessing and recording Aboriginal heritage values within the study area;
- Preparing an assessment of the cultural heritage values in consultation with the Aboriginal community;
- Identifying the potential impact of the proposed development on the assessed cultural heritage values; and
- Developing conservation and mitigation strategies for these values, with the aim of minimising impacts to cultural heritage wherever possible.

In addition, this report provides a significance assessment of the identified Aboriginal heritage values, as defined by the registered Aboriginal stakeholders (RAPs) for the project. Aboriginal people are the primary determinants of the significance of their cultural heritage and therefore Apex Archaeology cannot make a determination on the cultural significance without the input of the RAPs.

Any works which disturb the ground surface have the potential to impact Aboriginal archaeological deposits and therefore an assessment of whether the study area contains such deposits is required prior to the commencement of remediation works. An assessment of whether the proposed works would impact these deposits (if present) is also necessary, and identification of to what extent the deposits would be impacted is also required. The degree of impact which may be allowable is determined, in part, with consideration of the level of cultural significance attributed to the cultural values of the study area, both tangible and intangible.



2.0 ABORIGINAL CONSULTATION PROCESS

This section details the Aboriginal community consultation undertaken to assist in the heritage assessment of the study area. Aboriginal consultation in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010* was undertaken by Apex Archaeology for this project.

Aboriginal community consultation is a requirement in order to make assessments of Aboriginal cultural values, as Aboriginal people are the primary determinants of the significance of their cultural heritage and therefore Apex Archaeology cannot make a determination on the cultural significance without the input of the RAPs. Aboriginal people often have a strong connection to their Country, and to their ancestors, both past and present.

Material evidence of past Aboriginal occupation of an area is a tangible link to the intangible traditions, lore, customs, beliefs and history. These intangible values provide a sense of belonging for Aboriginal people, and cultural heritage and cultural practices are kept alive through being incorporated into everyday life, which helps maintain a connection to the past and to the present. It is a vital part of the identity of Aboriginal people.

Therefore, it is important that Aboriginal people are afforded the opportunity to understand, comment on and have input into projects that may impact areas which may be culturally sensitive, or damage items of cultural significance. The process of Aboriginal community consultation provides this opportunity, and this ACHAR details the results of the consultation undertaken for this project.

2.1 THE CONSULTATION PROCESS

The *Aboriginal cultural heritage consultation requirements for proponents 2010* provide the process for undertaking consultation with the Aboriginal community. This process includes identification, registration, engagement and consultation with those Aboriginal people who may have cultural knowledge which is relevant to determining the cultural significance of Aboriginal objects and places which may be within the study area.

The Consultation Guidelines detail a number of stages for consultation, as follows:

- Identification of those people who should be consulted for the project
- Inviting Aboriginal people to register their interest in being consulted for the project
- Providing information regarding the nature and scope of the project to the Aboriginal people who have registered an interest in being consulted – the registered Aboriginal parties (RAPs)
- Providing opportunities for RAPs to comment on the proposed methodology for cultural heritage consultation



- Presenting information about the potential impacts of the proposed development for the RAPs to comment on
- Providing opportunities for RAPs to comment on the cultural significance of the proposed development area
- Providing opportunities for RAPs to comment on the draft reports detailing the results of the archaeological and cultural assessments for the project

2.2 STAGE 1 CONSULTATION: COMMENCEMENT

Stage 1 requires a list of Aboriginal people who may have cultural knowledge relevant to the area to be prepared from several sources of information. The first step requires enquiries to be made of certain statutory bodies regarding whether they are aware of Aboriginal people or organisations that may have an interest in the study area, and their contact details. Any Aboriginal people or organisations identified in this step must be contacted and invited to register an interest in the project. In addition, a notification must be placed in local print media requesting Aboriginal people or organisations to register their interest in the project. A list of those who register an interest must be compiled. A minimum of 14 days from the date of the letter or newspaper advertisement must be allowed for registrations of interest.

As a result of the Stage 1 activities, a list of Aboriginal people who wish to be consulted for the project is developed. These Aboriginal people become the registered Aboriginal parties – the RAPS – for the project.

Letters requesting the details of Aboriginal people who may hold cultural knowledge relevant to the study area and who may wish to be consulted for the project were sent to several statutory agencies on 21 March 2023. Copies of these letters and responses are attached in Appendix B. These Step 1 letters were sent to the following agencies:

- Heritage NSW
- South East Local Land Services (SELLS)
- Shoalhaven City Council (SCC)
- Jerrinja Local Aboriginal Land Council (JLALC)
- Office of the Registrar, Aboriginal Land Rights Act 1983 (NSW) (ORALRA)
- Native Title Services Corp (NTSCorp)

Responses were received from Heritage NSW, NTSCorp, and SCC. Heritage NSW provided a list of Aboriginal people and organisations, NTSCorp requested that the South Coast Native Title Claimants be registered for the project, and Allen Bloxsome from SCC contacted Rebecca Bryant from Apex Archaeology by phone to ensure she had received registrations for the project. The individuals and organisations provided by the agencies were invited to participate in consultation for the project and the South Coast Native Title Claimants were registered for the project.



An online search of the National Native Title Tribunal (NNTT) identified a Native Title Application over the study area on behalf of the South Coast People. The application has been accepted for registration but not yet determined (Figure 3).

The Aboriginal people and organisations identified during this initial stage were contacted via letter (email if provided or via post if no email address given) on 6 April 2023, inviting them to register an interest in the project. Registrations were accepted until 21 April 2023. This is Step 2 of Stage 1 of consultation. Copies of these letters are attached in Appendix C.

In addition, an advertisement was placed in the *South Coast Register* on 12 April 2023, inviting registrations of interest from people who may have cultural knowledge of the project area. registrations were accepted until 26 April 2023. A copy of the advertisement is attached in Appendix D.

A total of ten Aboriginal people and organisations registered an interest in being consulted for the project. The following list comprises the registered Aboriginal parties (RAPs) for the project:

- Jerrinja Local Aboriginal Land Council (LALC)
- Djirringani Elders
- Gumaraa Aboriginal Experience Pty Ltd
- Guntawang Aboriginal Resources
- Kamilaroi Yankunytjatjara Working Group
- Murrabidgee Mullangari
- Raw Cultural Healing
- South Coast People (registered Native title Claimants)
- Sonione Wagabut Rogers
- Wingarra Wilay

2.3 STAGE 2 & 3 CONSULTATION: PRESENTATION AND GATHERING OF INFORMATION

During Stage 2, information about the proposed project is provided to the RAPs, including location, scale, proposed development plans, timeframes, methodologies and any other relevant details relating to the project. This information can be provided in writing or at a meeting (or both), and an opportunity for the RAPs to visit the site may also be provided.

During Stage 3, RAPs are invited to share information about the cultural significance of the study area, which can assist in the assessment of the cultural significance of the Aboriginal objects and/or places within the study area. The cultural heritage assessment informs and integrates with the scientific assessment of significance and therefore can assist in the development of mitigation and management measures for the project.

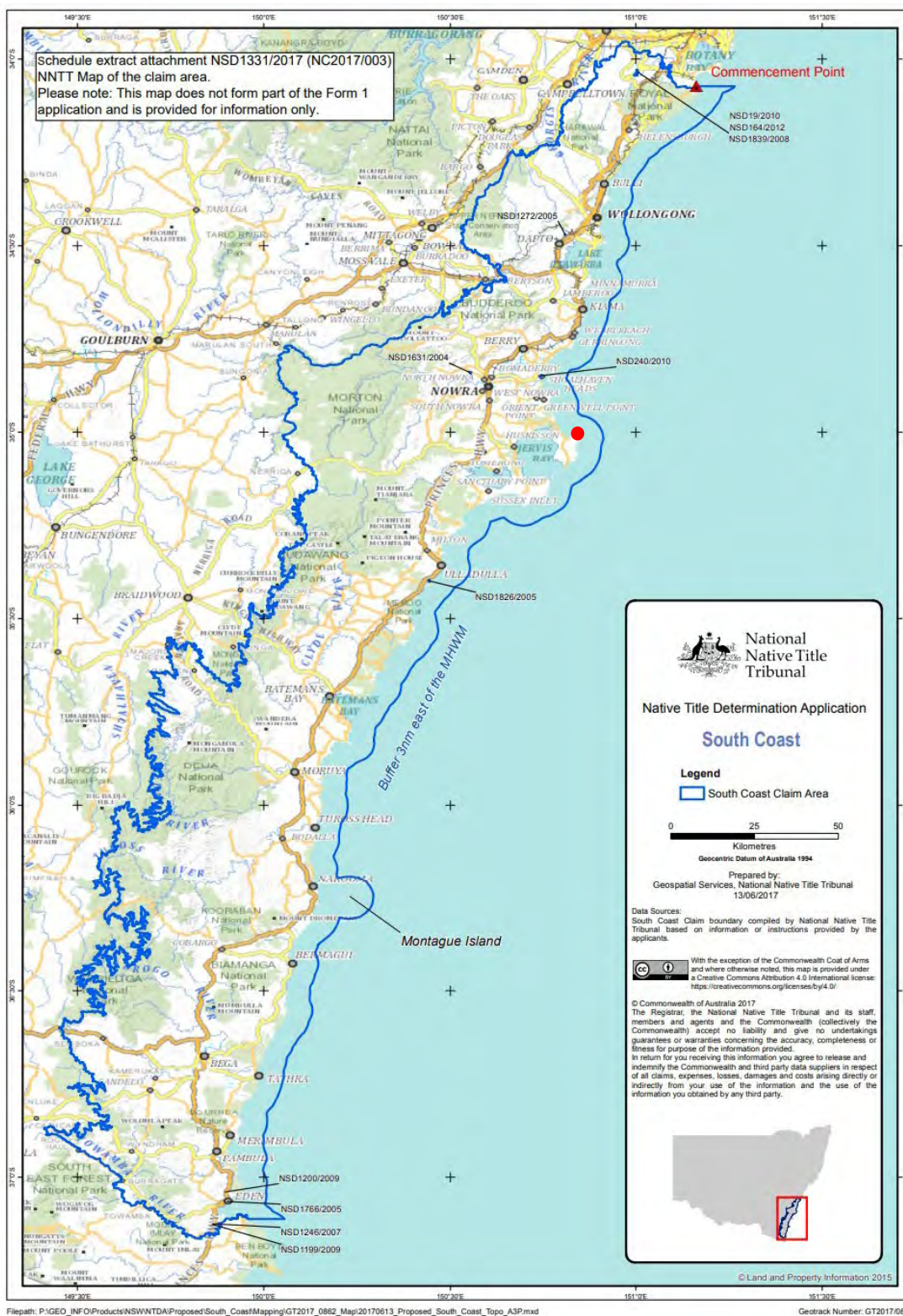


Figure 3: Study area (red dot) within the South Coast People, Tribunal No NC2017/003 Native Title Claim boundary.



A methodology detailing how this information will be gathered must be provided to the RAPs for comment and a minimum of 28 days must be allowed for responses to be received. Any feedback must be considered and implemented as appropriate into the methodology.

Stage 2 and 3 can be undertaken concurrently. The information about the project and the methodology for seeking cultural knowledge can be provided in the same written documentation or at the same meeting.

Details of the proposed project and the proposed methodology for undertaking the cultural heritage and archaeological assessments for the project were provided in writing to each of the RAPs on 24 April 2023. Comments were accepted until 22 May 2023. One response from Wendy Morgan from Guntawang replied to the document on 15 May 2023 and advised in an email that the group do not believe the midden can be saved as it is “breaking away from the side of the hill, along with the concrete footpath and railings”. Wendy advised that the group would like “proper care taken when removing the railing, checking that the area was not used for a burial site”. Wendy advised she would be happy to chat over the phone.

Rebecca Bryant from Apex Archaeology contacted Wendy on the same day and thanked her for her comments and advised that Apex Archaeology is aware that middens have the potential to contain burials. Rebecca also spoke with Wendy on the phone and advised that after the field work has been completed steps will be taken to protect the eroding midden. Wendy had initially emailed that she did not want her information included in the report. However, subsequent to their phone discussion, Wendy advised she was happy to have her comments and concerns documented.

The RAP responses are attached in Appendix E.

No other comments were received from any of the other RAPs for the project, and no specific cultural information pertaining to the study area was received from any of the RAPs for the project during this stage of consultation.

2.4 STAGE 4: REVIEW OF DRAFT REPORT

Stage 4 sees the preparation of the draft ACHAR, which details the results of the cultural heritage assessment. The draft is provided to the RAPs for their review and comment. A minimum of 28 days to comment on the ACHAR must be allowed. All comments must be addressed in the final document and the proponent’s response to RAP comments must be included. Copies of any submissions received from RAPs must be included in the final ACHAR.

The draft report was sent to all RAPs on 3 August 2023. No comments were received from any of the RAPs for the project.



3.0 SUMMARY AND ANALYSIS OF BACKGROUND INFORMATION

This section presents information about both the physical and cultural landscape in which the study area is located, as well as previous archaeological and ethnohistorical studies, to provide context and background to the existing knowledge of Aboriginal culture in the area.

3.1 DESCRIPTION OF THE STUDY AREA

The study area is located at Wilsons Beach and is within part of Lot 7004 DP1030104 within Abrahams Bosom Reserve in Currarong. It is located on the northern side of the Beecroft Peninsula that also forms the northern headland of Jervis Bay. The study area is located at the base of the northern termination point of the Abrahams Bosom Walking Track that traverses through the Abrahams Bosom Reserve. The track ends at the top of steel stairs positioned on top of outcropping sandstone within undulating low-lying sand dune covered in vegetation. There are six steps that lead directly on to the sandy beach that slopes gently down to the west onto the shoreline of Crookhaven Bight. Outcropping sandstone boulders bookend the sandy beach to the north and south.

3.2 EXISTING ENVIRONMENT

The study area is located within the geological structure known as the Sydney Basin, which is roughly bounded by the Great Dividing Range to the west, the coast to the east, Newcastle to the north and Durras, near Batemans Bay, to the south. More specifically, the study area is located at Wilsons Beach within Abrahams Bosom Reserve, which is located on the northern side of the Beecroft Peninsula that also forms the northern headland of Jervis Bay.

The shell midden has been impacted by the construction of the stairs, wind erosion, and water runoff from Abrahams Reserve.

3.2.1 GEOLOGY, SOILS AND TOPOGRAPHY

The underlying geology of the majority of the Beecroft Peninsula including the study area is the Snapper Point Formation, locally known as 'Jervis Bay Sandstone'. It comprises quartz, sandstone and minor conglomerate.

It was not possible to include the name of the soil landscape that overlies the geology on the Beecroft Peninsula as there appears to be a general gap in the soil landscape maps available for this area. There are no maps on the New South Wales Government's 'Soil and Land information Dataset' (SEED). Nevertheless, despite being unable to identify the official name of the soil landscape, aerial footage shows that the study area leads onto a sandy beach which is fringed by a low-profile dune scape. The origins of the sand deposit are most likely a combination of marine and aeolian sand deposit, given the large amount of shell and shell fragments clearly visible in general map images of Wilsons Beach.



3.2.2 FLORA AND FAUNA

The plants found within the Beecroft Peninsula are typical of the sandstone soils of the Sydney Basin. Heathland plant species would have been, and still are, prominent. The coastal sand dunes support *Banksia* species such as *Banksia integrifolia*, *Eucalyptus botryoides* and a number of *Casuarina* including Swamp oak and she-oak. Several rainforest plants can also be found.

There would have been a large variety of animals including brushtail and ringtail possums, eastern grey kangaroos, swamp wallabies, bats, parrots, as well as reptiles, amphibians and fish, crustaceans and shellfish on the rock platforms that border the beach.

Many of these plants and trees would have provided resources for Aboriginal people; to fulfill dietary needs, provide raw material for tools and implements, and used for medicinal purposes. For example: the various *Eucalypts* would have provided wood for shields, canoes and coolamons; gum from the wattle trees would have been collected and mixed with ash to make a strong resin to attach stone tools to wooden handles for spears and axes; fur from possums would have been sewn together using a needle made from animal bones and thread made from the sinew of animal's muscles.

3.2.3 HYDROLOGY

There are no creek or drainage lines mapped within the study area. However, there is a creek with a number of tributaries and a drainage line that are within Abrahams Bosom Reserve. The closest creek to the study area is Abrahams Bosom Creek, which is 900 m to the south of the study area. It is considered a second-order creek and may not have provided a reliable fresh-water source. Currorong Creek, approximately 2 km to the southwest, is a third-order creek and would probably have been a more reliable source of fresh water.

Watercourse classification ranges from first order through to fourth order (and above), with first order being the lowest, ie a minor creek or ephemeral watercourse, and fourth or above being a large watercourse such as a river, as defined by the Department of Planning and Environment (DPE; Figure 4). This classification is recognised as a factor which helps the development of predictive modelling in Aboriginal archaeology in NSW.

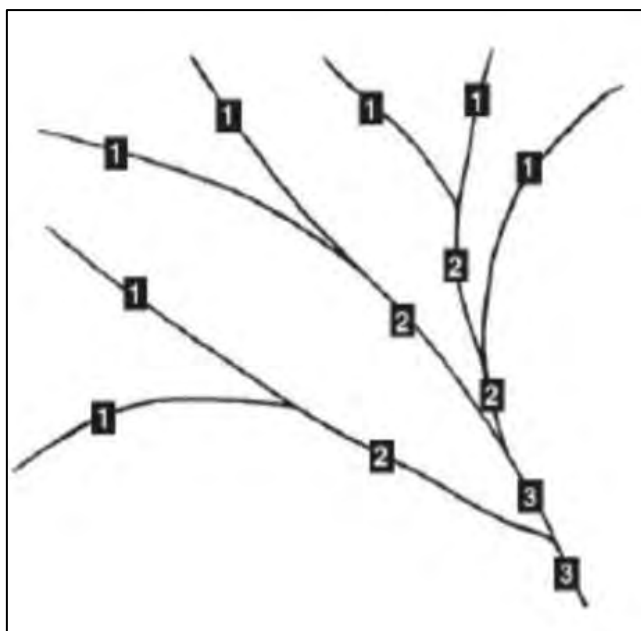


Figure 4: The Strahler system (Source: Department of Planning and Environment 2016).

3.3 MATERIAL EVIDENCE OF ABORIGINAL LAND USE

3.3.1 AHIMS

A basic search of the study area of approximately 400 m x 200 m was conducted on 21 November 2022 and identified one registered site within the study area. A subsequent extensive search was undertaken over the same area on the 6th June 2023 which also identified the initial site AHIMS #58-2-0054 (Crookhaven Bight; Honeysuckle Point). The site features listed are 'shell' and 'artefact'.

The site card for AHIMS #58-2-0054 states that the site had initially been recorded by Stephen Wiley in 1977. It was noted at the time as being at the western side of a small beach and at the end of a track. The site description detailed the midden was a 15 m long, 15 m wide and 2 m deep shell midden with 'mussels and turban'. The condition was considered to be mostly stable and covered by trees, but the front side was noted as being eroded and reworked, and interspersed with washup. There was no mention of any stone artefacts been found.

The site was inspected three years later in 1980 by G. Connolly, who at the time was a trainee site recorder and had undertaken the inspection on behalf of the Tribal Elders of Roseby Park. Connolly described the site as being an exposed site below a dune surface and the exposure was approximately 50 cm deep and 10 m long. Shell species were noted as comprising "limpets, conchs, abalone, periwinkle, and pippies". The site condition was considered to be reworked due to erosion. Again, no stone artefacts were mentioned.

AHIMS #58-2-0054 is the only site registered on Wilsons Beach and within an approximate 300 m radius. the approximate location of the site can be seen in Figure

5. A copy of the search results is appended in Appendix F and have been utilised for the AHIMS site mapping.

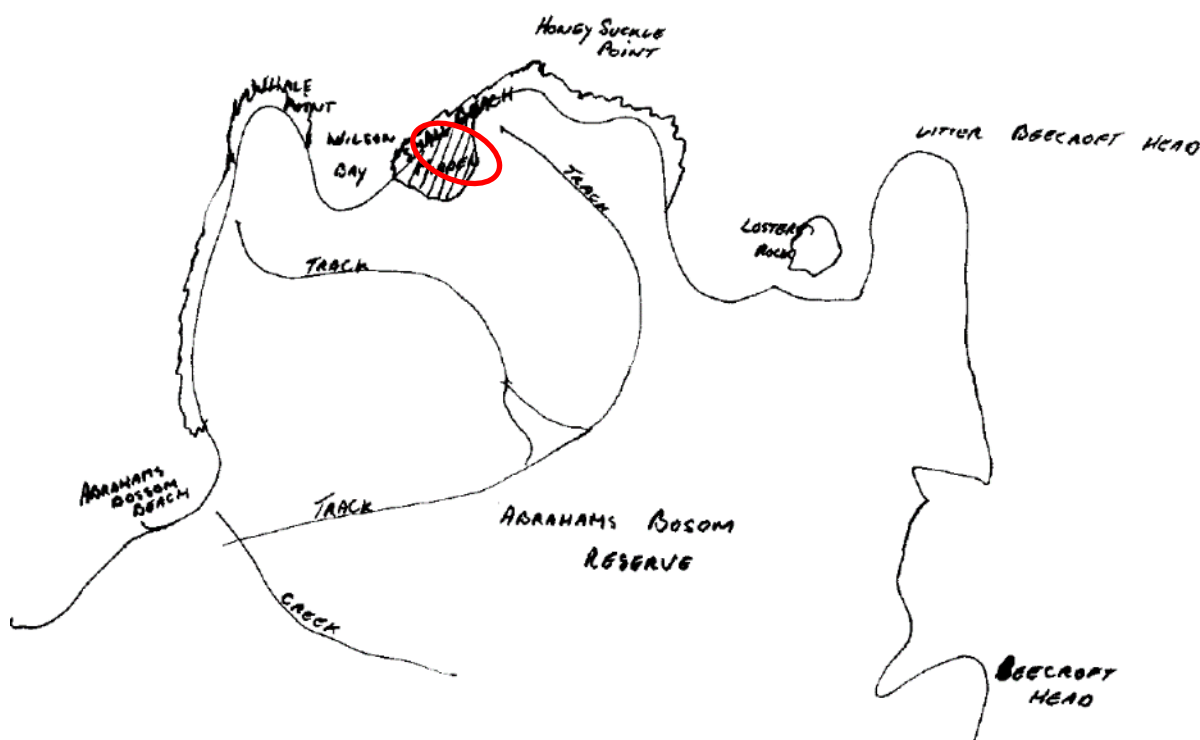


Figure 5: Sketch map of location of AHIMS #58-2-0054 (not to scale; approx study area circled)

3.3.2 PREVIOUS ARCHAEOLOGICAL ASSESSMENT

A number of archaeological investigations have been undertaken within the Beecroft Peninsula and in the neighbouring Jervis Bay area since the mid 1900s (Table 3). These have been for research projects and to fulfill statutory requirements prior to the construction of buildings and civil works. The results of these investigation have demonstrated that this resource-rich coastal area has been used by Aboriginal people for at least 4,000 years BP, but probably for much longer.

The excavations at the rockshelters within the Beecroft Peninsula at Currarong and at the Abrahams Bosom rockshelters revealed that a wide variety of stone tools/implements/weapons including, hammerstones, anvils, axes, backed blades and scrapers were used. Fish hooks made from shells were also present and indicate a change in fishing practices from spearing to catching by line in the last thousand years. Small and large animal bones sharpened to a point were also unearthed. The small ones could have been used as tips on pronged fishing spears, and the large ones used as needles to puncture holes through animal skins to make cloaks. Plant remnants, such as the *Xanthorrhoea* grass plant which Aboriginal people used to make resin to secure stone tools to wooden handles and the stalks were made into spears, were also found. The abundance of shells uncovered in clear stratigraphic layers also showed that rock platform shellfish species and estuarine species were



used a reliable source of protein. Evidence from the Currarong rockshelter established a change over time in the target shellfish species. Initially the estuarine rock oyster was heavily exploited at the beginning of site use 4,000 years ago. It was then replaced by another estuarine species - the mud whelk. Then, over time, there was a gradual increase of rocky shore species such as turban, nerite, and hairy mussel. And during the most recent phase there tended to be representation from both estuarine and rocky shore species.

Shell middens found within the Beecroft Peninsula and Jervis Bay area outside of rockshelters are generally not as well preserved. These middens in open areas have been largely impacted by high levels of disturbance from historic land practices and, depending on where they are situated within the landscape, subject to from wind and wave activity. These impacts have led to severe erosion and reworking of exposed shell, especially those within sand dunes facing the sea. Although some of these middens have been proposed to undergo mediation work to protect them, like the ones assessed by Feary in 2017 at Currarong, they are all threatened with the continuous rise of sea levels.

With regards to the current study area, the shell midden on the Beecroft Peninsula that is most comparable to the Wilsons Beach midden, is the one registered (AHIMS #58-2-0055) at Shell Beach assessed by Marjorie Sullivan in 1978. It is located approximately 500 m south west of Wilsons Beach and is of a similar size, and also faces westward within the same sand-dune landscape setting. Sullivan found that the shell midden had been cut through by wave action and a vertical face about 50 – 100 cm high was exposed along its entire length. Sullivan observed that the exposed seaward-facing portion of the shell midden had been “clearly and unequivocally reworked “. This was evident by the considerable amount of visible shell grit and water-worn shell. Sullivan concluded that it was not possible to determine if the exposed material derived from the proposed cultural midden, or had been washed up naturally from the adjacent platform. Furthermore, because the reworked portion of the deposit was so thoroughly disturbed, there was little scientific value that could be retrieved from it, even if it was carefully excavated. However, Sullivan recommended that because the presence of the reworked portion of the midden deposit protected the potentially more intact deposit that lay behind it, steps should be taken to stabilise it.

In summary, the artefactual evidence of previous visitation or long stays by Aboriginal people is concentrated further south near the Shoalhaven River and in a couple of sections along Bomaderry Creek. This area has outcropping sandstone for rock shelters and platforms for art and grinding grooves. They are also considered primary resources centres with proximity to freshwater, marine resources, raw material and a diversity in flora and fauna. This is particularly evident in the results of the salvage excavation at Nowra Bridge that uncovered thousands of stone artefacts, and in the analysis undertaken for Aboriginal cultural material remains of the Bomaderry Creek rock shelter that concluded that a wide range of stone, animal



and plant resources were sourced locally. However, it is likely that stone artefacts could be found within the study area as evidence of past Aboriginal occupation/visitation.

As mentioned in the previous section these assessments are discussed in more detail in the Apex Archaeology (2022) Archaeological Report attached to this ACHA.

Table 1: Previous heritage assessments undertaken by archaeological consultants in the region

Consultant	Date	Sites Identified	Region
Lampert	1971	Three	Currarong
Bowdler	1976	One	Bass Point
Sullivan	1978	One	Shell Beach, Abrahams Bosom Reserve
Paton and MacFarlane	1989	One	Abrahams Bosom, Beecroft Peninsula
Navin	1991	Numerous	Currambene Creek
Robert Paton Consultancy	1993	Two	Currambene Creek
Donlan	1996	One	Currambene Creek
Navin Officer Heritage Consultancy	2000	Two.	Moona Moona Creek
Wellington	2002	None	Huskisson
Biosis	2010	None	Callala Bay
AMBS	2010	Two	Currarong
Kuskie	2012	Three	Crookhaven Heads to Culburra
MDCA	2013	One	Huskisson
Feary	2014	One	Orion Beach
Feary	2016	One	Huskisson
Feary	2017	Three	Currarong
Feary	2018	None	Huskisson
NHC	2019	None	Huskisson
Apex Archaeology	2021	One	Huskisson

Based on the site types identified in the AHIMS register within a 1 km of the study area. They are all isolated stone artefacts or stone artefact scatters in open areas.

3.4 ETHNOHISTORY

Ethnohistorical evidence is based on the reports of colonisers and do not tend to include the Aboriginal perspective, leading to a Eurocentric view of Aboriginality. Additionally, historical records can be contradictory and incomplete regarding the exact tribal boundaries and locations of ceremonial or domiciliary activities of Aboriginal people pre-contact within the South Coast region. Boot (2002:58) notes:

The problem associated with ethnohistoric documents include their tendency to record unusual, rather than everyday events, and their focus on religious behaviour to the exclusion of woman and children (Attenbrow 1976:34; Sullivan 1983:12.4).



As a result, there are several versions of the Aboriginal history prior to colonisation, mostly due to differing records made in the historical period. Howitt (1904) defined the Yuin tribal area as extending from Cape Howe in the south to the Shoalhaven River in the north.

In contrast, other historical records made by early colonists indicate the study area is located within lands traditionally occupied by the Wandandian people, who were considered to have occupied an area extending from the Shoalhaven River south to Ulladulla (Tindale 1974)

However, some members of the Aboriginal community dispute these associations and claim the area falls within the lands of the Jerrinja tribe, which extends from Crooked River in the north to the Clyde River in the south. The Jerrinja tribe have been referred to as the “Saltwater people of the Shoalhaven” (Penfold 2017). A relatively recent article in the ‘New Bush Telegraph’ published the following editorial:

It’s also well documented that we stood up and fought for our Country back then and today; fighting other Tribes over boundaries, government departments over developments, the destruction of sacred sites, and protection of the environment as well as playing our part in the land rights movement in the late 1970s and 1980s. The Jerrinja People were at the forefront of the fight for justice, rights and our land; going to meetings with government officials, protests, rallies, marches, fighting alongside the Wallaga Lake People (Yuin), Coomaditti (Wodi Wodi); people all fighting for their own country.

Back then everyone knew where their Tribal boundaries were. There was a thing called ‘tribal respect’. Everyone got along ...what is important to establish is that in the early 1980s when setting up the land councils there was a Memorandum of Agreement written up by the Tribes; Jerrinja (Roseby Park), Wodi Wodi (Coomaditti), Wallaga Lake (Yuin), where each Tribes boundaries are; it was agreed and signed off by the Elders of each Tribe. The State Land Council has a copy and there’s one in the archives in Canberra.

For the purpose of clarity, listed below are the four tribes we recognise that belong to the south coast. Jerrinja Tribe: Crooked River (North) to Clyde River (South), Mountains to Sea (Roseby Park). Yuin Tribe: Clyde River (North) to Victorian Border (South) (Wallaga Lake). Wodi-Wodi: Crooked River (South) to Coledale (North) (Coomaditti). D’harawal: Coledale/Wom-barra (South) to Cronulla (North) (Campbelltown). (The New Bush Telegraph January 24, 2019)

In the early 1900s the Aboriginal people of the area started a small settlement at Summercloud Bay, which was later named Wreck Bay. It was established at this location because of the strong cultural ties that are intertwined with the natural environment. The bush and sea provided plentiful resources and it was a distance away from European settlements. A school was built at Wreck Bay in 1924 and in 1925 it became Wreck Bay Reserve under the provision of the New South Wales Aboriginal Protection Act. The first houses were built on the reserve in the 1930s, and in 1952 the boundary of the Wreck Bay Reserve was marked out by the government



and gazetted under the provision of the Aborigines Welfare Australian Capital Territory. Although there were attempts to transfer the reserve to house non-Aboriginal people it was vehemently opposed by the Community. In 1987 the Wreck Bay community secured land tenure of 403 ha of land via the Aboriginal Land Grant (Jervis Bay Territory) Act 1986 and the Wreck Bay Aboriginal Community Council was established.

In 1995 Amendments passed in both houses of Parliament and the Wreck Bay Aboriginal Community was granted freehold title to Jervis Bay National Park. One year later the Jervis Bay National Park board was established which has a majority of Wreck Bay Community representatives on the Board. In 1998 the Jervis Bay National Park was changed to Booderee National Park to reflect Aboriginal ownership. For the first time since colonisation, the Aboriginal people of the Jervis Bay area had, and continue to have, a real say on how traditional lands are managed (Wreck Bay Aboriginal Community Council 2023).

Although it is difficult to make definitive claims regarding the history of the people who once inhabited the Beecroft area, it is clear that a thriving Aboriginal population inhabited the area prior to colonisation, and the arrival of European settlers dramatically and negatively impacted the Aboriginal people of Australia.

Regardless of the specific identity of the original inhabitants of the area, Aboriginal society in general was constructed of a hierarchy of social levels and groups, with fluid boundaries (Peterson 1976), with the smallest group comprising a family of a man and his wife/wives, children and some grandparents, referred to as a 'clan' (Attenbrow 2010). The next level consists of bands, which were small groups of several families who worked together for hunting and gathering purposes (Attenbrow 2010). The third level comprised regional networks with a number of bands, and these bands generally shared a common language dialect and/or had a belief in a common ancestor. Networks would come together for specific ceremonial purposes. The highest level is described as a tribe, which is usually described as a linguistic unit with flexible territorial boundaries (Peterson 1976); although Attenbrow (2010) argues that "these groups were not tribes in the current anthropological sense of the word.

As emphasised by Havergal, (cited in Penfold 2017), people's expert knowledge and ontological connections to land and Country was not defined by boundaries, white picket fences, or a legal document denoting ownership. As explained by Wellington (2017), it was "more like a connected feeling between everything, there was no such thing as fencing...It was like a fluid landscape".

The traditional lifestyles of Aboriginal groups depended largely on the environment in which they lived. Within the hinterland, small animals such as wallabies, kangaroos, possums, small birds, freshwater fish and water birds would have formed part of the Aboriginal peoples' diet (Attenbrow 2010) as well as berries, tubers, seeds, leaves and nectar. Whilst coastal groups utilised marine and estuarine



resources within the Beecroft Peninsula and wider Jervis Bay region. As detailed in the Apex Archaeology AR attached in the appendix to this report, a number of rock shelters have been excavated within the Beecroft Peninsula that showed Aboriginal people living within the area used an extraordinary breadth and depth of natural resources within their surrounds.

3.5 LIMITATIONS

This report relies in part on previously recorded archaeological and environmental information for the wider region. This includes information from AHIMS, which is acknowledged to be occasionally inaccurate, due to inaccuracies in recording methods. No independent verification of the results of external reports has been made as part of this report.

It should be noted that AHIMS results are a record only of the sites that have been previously registered with AHIMS and are not a definitive list of all Aboriginal sites within an area, as there is potential for sites to exist within areas that have not previously been subject to archaeological assessment.

Field investigations for this report included survey. The results are considered to be indicative of the nature and extent of Aboriginal archaeological remains within the study area, but it should be noted that further Aboriginal objects and sites which have not been identified as part of this assessment may be present within the wider area.

It is recognised that Aboriginal people are the primary determinants of the significance of their cultural heritage, and as such, Apex Archaeology have relied on the Aboriginal community to provide cultural knowledge regarding the site, where they are willing and able to share such knowledge. However, there may be occasions where RAPs are unwilling or unable to share cultural knowledge regarding the site and thus our assessment of significance relies on scientific assessment only.



4.0 ABORIGINAL CULTURAL HERITAGE SIGNIFICANCE ASSESSMENT

4.1 INTRODUCTION

Cultural or social significance can be defined as relating to the spiritual, traditional, historical and/or contemporary associations and values attached to a place or objects by Aboriginal people. Further, the tangible and intangible evidence of their cultural heritage is valued by Aboriginal people as it forms an essential part of their cultural identity and their connection to Country (DECCW 2010a).

The *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010a) acknowledge that:

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

Undertaking consultation with Aboriginal people ensures that potential harm to Aboriginal objects and places from proposed developments is identified and mitigation measures developed early in the planning process.

4.2 CRITERIA

The Burra Charter is considered an appropriate framework for the assessment of cultural heritage, which can be made based on the following assessment criteria:

- **Social value:** Also referred to as cultural value, this criterion considers the spiritual, traditional, historical or contemporary associations an area or place has for Aboriginal people
- **Historic value:** the relationship between a place and people, events, phases or activities of importance to the Aboriginal community
- **Scientific value:** assessment under this criterion considered the ability of a landscape, place, area or object to inform scientific research and/or analysis and to assist in answering research questions
- **Aesthetic value:** the ability of a place, area, landscape or object to demonstrate aesthetic characteristics, or possess creative or technical values

These should be graded so as to allow the significance to be described and compared as high, moderate or low.

4.3 SIGNIFICANCE ASSESSMENT

SOCIAL VALUE

The Aboriginal community are best placed to make a determination of the social or cultural value of the study area. No comments were received from the RAPs



regarding the social value of the study area and therefore no comments regarding the specific social value of the study area can be made. It is important to note that many landscapes are considered part of a cultural landscape and therefore hold social and cultural significance to Aboriginal people. It is noted that the Beecroft Peninsula region generally contains areas highly significant to the Aboriginal people of the region.

HISTORIC VALUE

One previously recorded site is within the study. Evidence of shell midden material would provide a link to Aboriginal people within the headland in the past. However, the exposed shell deposit is highly disturbed, fragmentary and is comingled with recent shell washed up. The shell deposit is not rare in and of itself, and therefore the site is considered to have little historical value with regard to Aboriginal heritage located within the assessed study area. However, there may be intact cultural shell midden behind the exposed shell midden which could contain evidence of Aboriginal occupation at the site. As such, the study area may have some historical value with regards to Aboriginal heritage.

SCIENTIFIC VALUE

The assessed study area is not considered to have any specific scientific value. The exposed shell deposit is of low research or educational value due to its fragmentary nature and lack of evidence of associated Aboriginal cultural material, such as stone and shell artefacts. Evidence of Aboriginal cultural material may be contained in subsurface deposits in the surrounding areas, but these will not be impacted by the proposed remediation works. As such, the scientific value of the study area is considered to be low.

AESTHETIC VALUE

Generally, aesthetic value is determined by the response evoked by a setting. The study area is bordering a small northwest facing beach. The area would have been protected from southerly winds with views and access to the open ocean. The study area is considered to have high aesthetic value based on its pleasant beach setting that would have been enjoyable in certain weather conditions.

4.4 CULTURAL SIGNIFICANCE ASSESSMENT

Generally, all Aboriginal sites are of high significance and importance to the Aboriginal community, both locally and more broadly. The Aboriginal social or cultural value of the study area can only be determined by the Aboriginal community and to date, no comments have been received regarding the specific social significance of the study area.



5.0 PROPOSED ACTIVITY

The study area comprises approximately 20m of the beach access end of Abrahams Bosom Walking Track, and the area around the existing metal staircase which formerly led to the beach. Significant erosion has caused this staircase to be obsolete, and works are required to rectify this area to provide safer access to Wilsons Beach for pedestrians.

As such, it is proposed to remove the existing staircase. This would be achieved through angle grinding the existing metal poles off of the sandstone boulders they are attached to, and then cutting the staircase into manageable pieces to allow removal from site by hand. The sandstone would be retained. Geofabric or similar textile would then be laid along the eroded area, and fill (likely clean sand) would be laid over the top to ensure the safety of the public who may access this area. This would assist in protecting the shell deposit from any further impact during works and into the future.

Additionally, minor drainage works are likely to be necessary to prevent a recurrence of the severe erosion that occurred during extreme rain events in the Shoalhaven region.

5.1 POTENTIAL IMPACT

There is one site, AHIMS site #58-2-0054, located within the study area. The proposed rectification works would positively impact the site by protecting it.

5.2 IMPACT TO CULTURAL HERITAGE VALUES

The only proposed impact is to allow the rectification and remediation works. These works would assist in protecting the shell deposit from further impact, including impact from erosion and pedestrian activity. This would, in turn, would preserve cultural heritage values of the site.

5.3 JUSTIFICATION

The proposed works are required to address the urgent need to prevent further erosion to the registered AHIMS site #58-2-0054, which has been recorded as a shell midden. The site is currently being impacted by sea water from wave and storm activity, pedestrian activity, wind, and in particular freshwater runoff from Abrahams Bosom Reserve following extreme rain events in the Shoalhaven region. The damage is clearly illustrated in Plates 1 & 2. The only work required within the study area is the rectification of the exposed area of shell deposit within part of Lot 7004 DP1030104.



Plate 1: Study area c. Nov 2022



Plate 2: Study area c. June 2023



6.0 AVOIDING AND MINIMISING HARM

6.1 CONSIDERATION OF ALTERNATIVES

The study area contains one registered Aboriginal site, AHIMS site #58-2-0054. It is currently being impacted by pedestrian activity and natural erosion through wave and wind damage. If remediation and rectification works are not undertaken the exposed area within the site will be subject to further impacts and other potential archaeological material will be damaged or lost.

Three options were considered as part of this assessment in order to avoid further harm to the site, as outlined below.

OPTION 1: DO NOTHING

If the 'do nothing' option is selected and the remediation works do not proceed, the site will be further impacted. As such, not permitting the remediation works to occur would be a poor overall outcome. This is particularly pertinent given the level of impact visible between November 2022 and June 2023, shown in Plates 1 & 2.

OPTION 2: ADDITIONAL ARCHAEOLOGICAL INVESTIGATION

Although further investigation of the shell currently exposed within the site is unlikely to provide additional information, there may be culturally deposited material around, and further inland from the exposed midden bordering the beach. However, to determine if this is the case, invasive archaeological investigation such as testing the subsurface by excavations would have to be undertaken. This is not considered necessary as the remediation works would be concentrated within the area that has been impacted. Furthermore, archaeological testing would only provide a sample of what lies beneath the surface. Cultural remains such as human burials may not be found through this method or may be inadvertently disturbed. Even though the portion of the site assessed is considered to be of low archaeological significance, remediation works will protect any cultural remains that may be below or around the assessed area.

OPTION 3: REMEDIATION ONLY

This option sees the remediation works completed with no further archaeological investigation occur. This is considered the most appropriate option, as the site is of limited scientific significance and additional investigation is unlikely to provide further information regarding the Aboriginal occupation of the area in the past. This would also result in a greater impact to the archaeological resource than is required given the proposed works do not propose additional impact to the area.

SUMMARY

In summary, Option 3 is considered the most appropriate option for the current project.



6.2 AVOIDANCE OF HARM

An exposed section of site AHIMS site #58-2-0054 within the sand dune is currently exposed and is being impacted by primarily natural activities. In order to prevent further impacts, urgent remediation and rectification measures are required to protect the exposed shell deposits, and any other potential archaeological material that may be within the immediate surrounds.

An AHIP is required to permit the proposed remediation and rectification works to protect the site.

6.3 ECOLOGICALLY SUSTAINABLE DEVELOPMENT

It is a requirement of Section 2A(2) of the NPW Act to apply the principles of Ecologically Sustainable Development (ESD) when considering any impact to Aboriginal objects and places. ESD integrates economic and environmental considerations, which includes cultural heritage, into decision-making processes. In general, ESD can be achieved through consideration and implementation of two key principles, being intergenerational equity and the precautionary principle.

Intergenerational equity refers to the present generation having consideration for the health, diversity and productivity of the environment for those generations to come. In terms of Aboriginal cultural heritage, this relates to cumulative impacts to Aboriginal objects and places within a region. Intergenerational equity therefore relies on the understanding that a reduction in the number of Aboriginal objects and places within a region results in fewer opportunities for Aboriginal people to access their cultural heritage in the future. Thus, it is essential to understand what comprises the Aboriginal heritage resource, both known and potential, when assessing intergenerational equity within a region.

The precautionary principle relates to threats of serious or irreversible environmental damage, and that lack of scientific certainty regarding the degree of potential damage should not be a reason to postpone adequate reasonable measures to prevent harm to the environment. Regarding Aboriginal cultural heritage, the precautionary principle relates to where a proposed development may seriously or irreversibly impact Aboriginal objects or places, or their significance; and where there may be uncertainty relating to the integrity, rarity or representativeness of Aboriginal cultural values. The Code of Practice outlines that a precautionary approach should be taken to avoid or reduce damage to Aboriginal objects or places, with cost-effective measures implemented wherever possible. Additionally, a cumulative impact assessment should be completed to determine how the proposed development would impact the cultural resource in the wider region.

Consideration should be given to the significance of the sites present within an area, and whether they are able to transmit cultural information to future generations, or to act as teaching aids.

The portion of the site, AHIMS #58-2-0054 within the study area is assessed as being of low cultural significance, based on the information available at this stage.



However there may be subsurface Aboriginal cultural material around the area that is being buffered by the exposed shell.

6.3.1 INTERGENERATIONAL EQUITY

The proposed works will assist in maintaining intergenerational equity by protecting potential cultural material for future generations.

6.3.2 CUMULATIVE IMPACTS

The cumulative impact of the project on the Aboriginal cultural resource must be considered as part of an assessment, and managed appropriately and sensitively. Avoidance of impact is the best practice approach wherever possible, particularly for sites that are intact, contain high numbers of artefacts, or are considered significant to the community.

In terms of cumulative impact, the proposed works are to protect any remaining cultural deposit within the area and prevent further impact occurring through erosion after rainfall.

Overall, it is considered that the proposal has an acceptable and beneficial impact on the Aboriginal cultural heritage of the region, particularly if the proposed remediation and rectification measures are enacted.

6.4 ABORIGINAL COMMUNITY INPUT

The RAPs have been consulted as part of this project, and their input, where received, has been incorporated into the report and recommendations.



7.0 RECOMMENDATIONS

The following recommendations are made on the basis of:

- The statutory requirements of the NP&W Act 1974;
- The requirements of Heritage NSW;
- The results of the cultural and archaeological assessment;
- An assessment of the likely impacts of the proposed development; and
- The interests of the registered Aboriginal stakeholders and the cultural heritage record.

It was found that:

- There was one previously identified Aboriginal site located within the study area (AHIMS #58-2-0054).
- The study area was considered to be highly disturbed by natural impacts.
- The only work required within the study area is the rectification of the exposed area of shell deposit within part of Lot 7004 DP1030104.
- Detailed assessment of the exposed section of shell deposit was unable to definitively conclude it was Aboriginal in origin.
- Despite the inconclusive assessment of the origin of the shell deposit, it is registered as an Aboriginal shell midden and as such, an Aboriginal Heritage Impact Permit (AHIP) is required to permit rectification works to the exposed section of shell deposit.

The following recommendations have been made.

RECOMMENDATION 1: APPLICATION FOR AHIP REQUIRED

An application should be made to Heritage NSW for an AHIP to permit rectification works to occur in the vicinity of the exposed shell deposit, AHIMS site #58-2-0054. This area should be covered with geofabric or similar textile, and covered with fill (clean sand or similar) to ensure no further impact occurs to this location. Sandbags should be placed on top of geofabric in areas requiring significant remediation to ensure stabilisation of the area. Minor drainage works are also necessary to direct water flow away from the access track and prevent further washout occurring.

RECOMMENDATION 2: MAINTAIN ABORIGINAL COMMUNITY CONSULTATION

Consultation with the RAPs regarding the project should continue, in order to keep the RAPs informed about the management of Aboriginal cultural heritage within the study area. This includes notifying the RAPs when an AHIP application is lodged, and also in the event an AHIP is issued.

Consultation undertaken for this project must be maintained at least every six months in order to maintain validity. It is the Proponent's responsibility to ensure consultation remains valid. In the event a gap of more than six months occurs between consultation events, it may be necessary to restart the consultation process to support any AHIP applications that are necessary.



RECOMMENDATION 3: WORKS BOUNDARIES

The proposed remediation works must be contained within the assessed boundary for this project. If there is any alteration to the boundary of the proposed remediation works to include additional areas not assessed as part of this archaeological investigation, further investigation of those areas should be completed to assist in managing Aboriginal objects and places which may be present in an appropriate manner.

RECOMMENDATION 4: STOP WORK PROVISION

Should unanticipated Aboriginal archaeological material be encountered during site works, all work must cease in the vicinity of the find and an archaeologist contacted to make an assessment of the find and to advise on the course of action to be taken. Further archaeological assessment and Aboriginal community consultation may be required prior to the recommencement of works. Any objects confirmed to be Aboriginal in origin must be reported to Heritage NSW.

Human remains of Aboriginal people have previously been recorded in shell middens within rockshelters within Beecroft Peninsula, and within sand dune deposits in Jervis Bay. In the unlikely event that suspected human remains are identified during rectification works, all activity in the vicinity of the find must cease immediately and the find protected from harm or damage. The NSW Police and the Coroner's Office must be notified immediately. If the finds are confirmed to be human and of Aboriginal origin, further assessment by an archaeologist experienced in the assessment of human remains and consultation with both Heritage NSW and the RAPs for the project would be necessary.

RECOMMENDATION 5: REPORTING

One digital copy of this report should be forwarded to Heritage NSW to support the required AHIP application for the project, along with required supporting documentation.

One digital copy of this report should be forwarded to Heritage NSW for inclusion on the Aboriginal Heritage Information Management System (AHIMS).

One copy of this report should be forwarded to each of the registered Aboriginal stakeholders for the project.



8.0 BIBLIOGRAPHY

AMBS, 2010. *Currarong Sewerage Scheme Archaeological Excavation Scheme*. Report to NSW Department of Commerce.

Attenbrow, V. 2010, *Sydney's Aboriginal Past: Investigating the archaeological and historical records*. UNSW Press, Sydney (Second Edition).

Attenbrow, V., Corkill, T., Pogson, R., Sutherland, L., Grave, P. 2017, 'Non-destructive Provenancing of Ground-Edged Mafic Artifacts: A Holocene Case Study from the Sydney Basin, Australia'. *Journal of Field Archaeology* 42(3): 173-186.

Apex Archaeology. 2018, *Vermont Estate Central Precinct Stage 3: Archaeological Technical Report*. Report to Johnson Property Group.

Apex Archaeology, 2021, *The Pavilion' Development, Huskisson, NSW. Aboriginal Cultural Heritage Assessment Report*. Report to Kamsley Pty Ltd.

Biosis. 2020, *Halloran Trust Lands, Callala Bay: Archaeological Report*. Report to Shoalhaven City Council.

Boot, P. 2002, *Didthul, Bhundoo, Gulaga and Wadbilliga: An Archaeological Study of the Aboriginals of the New South Wales South Coast Hinterland*. Thesis submitted for the degree of Doctor of Philosophy of the Australian National University.

Bowdler, S. 1970, *Bass Point: The Excavation of a South East Australian Shell Midden Showing Cultural and Economic Change*. Unpublished BA (Hons) Thesis, University of Sydney, Sydney.

Bowdler, S. 1976 Hook, Line and Dilly Bag: An Interpretation of an Australian Coastal Shell Midden. *Mankind*, Vol.10 pp.248-58.

Bowdler, JM., Johnston, H., Olley JM., Prescott, JR., Roberts, RG., Shawcross, W and Spooner, N. 2003, 'New ages for human occupation and climactic change at Lake Mungo, Australia.' *Nature* Vol 421:30, pp.837-840.

Corkill, T. 2005, "Sourcing Stone from the Sydney Region: A Hatchet Job." *Australian Archaeology* 60: 41-50.

Clarkson, C., Smith, M., Marwick, B., Fullagar, R., Wallis, L., Faulkner, P., Manne, T., Hayes, E., Roberts, R., Jacobs, Z., Carah, X., Lowe, K., Matthews, J and Florin, S. 2015, The archaeology, chronology and stratigraphy of Madjedbebe (Malakunanja II): A site in northern Australia with early occupation. *Journal of Human Evolution*. 83:46-64

DECCW. 2010a, *Aboriginal cultural heritage consultation requirements for proponents 2010*. DECCW, Sydney South.



DECCW. 2010b, *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*. DECCW, Sydney South.

DECCW. 2010c, *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*. DECCW, Sydney South.

Dawson, J. 1881. *Australian Aborigines. The languages and customs of several tribes of Aborigines in the western district of Victoria Australia*. George Robertson, Melbourne.

Donlon, D. 1996, *Aboriginal skeletal remains from Currambene Creek, on the South Coast of New South Wales*. Report to NSW National Parks and Wildlife Service, Nowra.

Eades, D.K. 1976, *The Dharawal and Dhurga Languages of the NSW South Coast*, Australian institute of Aboriginal Studies, ANU, Canberra.

Feary, S. 2012, *Investigation of a Possible Aboriginal Site at the Huskisson Hotel, Jervis Bay, New South Wales*. Report to Steve Bartlett, Kamsley Pty Ltd.

Feary, S. 2014, *Archaeological investigation for a proposed shared path at Orion Beach, Vincentia, New South Wales, Shoalhaven Local Government Area. Aboriginal cultural heritage assessment report*. Report to Shoalhaven City Council.

Feary, S. 2016, *Proposed shared path across Moona Moona Creek, Huskisson, NSW. Aboriginal cultural heritage due diligence assessment*. Report to Shoalhaven City Council.

Feary, S. 2018, *Proposed sale and redevelopment of Anglican Church grounds, Huskisson. Aboriginal cultural heritage due diligence assessment*. Report to Bartlett and Associates Pty Ltd

Fitzhardinge, L. F. 1979, *Sydney's First Four Years, A Narrative of the Expedition to Botany Bay and a Complete Account of the settlement of Port Jackson 1788 – 1791 by Captain Watkin Tench of the Marines*. Library of Australian History: Sydney.

Grant, J. 1801, Extract from Ships journal in letter from Governor King to Duke of Portland. In *Historical Records of New South Wales*, Vol IV, Hunter and King 1800, 1801, 1802. Charles Potter, Government Printer, Facsimile Edition 1976.

Heritage Branch Department of Planning. 2009, *Assessing Significance for Historical Archaeological Sites and 'Relics'*. Heritage Council of NSW, Sydney.

Howitt, AW. 1904, *The Native Tribes of South-East Australia*. Macentimetresillan & Co. London.

Hughes, P & R Lampert. 1982, Prehistorical population changes in southern coastal New South Wales. In S. Bowdler (ed) *Coastal Archaeology in Eastern Australia: Proceedings of the 1980 Valla Conference on Australian Prehistory*. Pp 16-28.



Occasional Papers in Prehistory 11. Department of Prehistory Research School of Pacific Studies, Australian National University, Canberra.

Jervis Bay Maritime Museum. 2023. The Amazing story of the Grass Tree. Available at <http://jervisbaymaritimemuseum.blogspot.com/2016/11/grass-tree-xanthorrhoea.html> . (Accessed 5 June 2023)

JMcD CHM. 2005, *Archaeological salvage excavation of site RTA-G1 109-113 George Street Parramatta*. Unpublished report to Landcom Pty Ltd.

Kelleher Nightingale Consulting. 2020, *Nowra Bridge Project Boundary Adjustments: Aboriginal Heritage Due Diligence Assessment*. Report to Transport NSW.

Kelleher Nightingale Consulting. 2020, *Nowra Bridge Project: Aboriginal Archaeological Salvage Excavation, Aboriginal Heritage Impact Permit #C000574*. Report to Fulton Hogan.

Kuskie, P. *Proposed Mixed Use Subdivision at West Culburra, Shoalhaven City, South Coast of New South Wales: Aboriginal Cultural Heritage Assessment*. Report to Realty Realizations Pty Limited.

Kuskie, P. and Kamminga, J. 2000 *Salvage of Aboriginal archaeological sites in relation to the F3 Freeway near Lenaghans Drive, Black Hill, New South Wales*. Unpublished report by Southeast Archaeology to Northern Region, Roads and Traffic Authority.

Kuskie, P. South East Archaeology, 2008. *An Aboriginal Heritage Impact Assessment of a Proposed Ethanol Plant Upgrade at Shoalhaven Starches, Bomaderry, South Coast of New South Wales*. Report to Manildra Group.

Kohen, JL., Stockton, ED., and Williams, MAJ. 1984, 'Shaws Creek KII rockshelter: a prehistoric occupation site in the Blue Mountains piedmont, eastern New South Wales'. *Archaeology in Oceania* 19(2):57-73.

Lampert, RJ. 1971, Coastal Aborigines of Southeastern Australia. In DJ Mulvaney and J Golson (Eds), *Aboriginal Man and Environment in Australia*. Pp 114-132. Australian National University Press, Canberra.

Lampert, R.J. Brurrill Lake and Currorong. *Terra Australis* 1. Department of Prehistory Research School of Pacific Studies, The Australian national University.

Mary Dallas Consulting Archaeologists. 2013, *Aboriginal Cultural Heritage Assessment Report for Lot 102 DP755928, 2 Murdoch Street Residential Development Huskisson, NSW*. Report to Skyton Developments NSW Pty Ltd

McDonald J. 2005, *Archaeological Salvage Excavation of Eight Archaeological Landscapes in the Second Ponds Creek Valley Rouse Hill Development Area, NSW*. Unpublished report to Rouse Hill Infrastructure Pty Ltd and Landcom.



McDonald, J. 2008, *Dreamtime Superhighway: An analysis of Sydney Basin rock art and prehistoric information exchange*. Terra Australis. Australian National University E Press, Canberra.

Mills, K. 2022. Beecroft Peninsula and Beecroft Weapons Range. *An Introduction to Beecroft Peninsula*. Available at <https://resources.austplants.com.au/wp-content/uploads/INTRODUCTION-TO-BEECROFT-PENINSULA.pdf> (Accessed 15/06/2023).

Mulvaney, J & Kamminga, J. 1999, *Prehistory of Australia*. Allen & Unwin, Crows Nest.

Naval Historical Society of Australia, 2023. Naval Historical Society of Australia. Available at <https://navyhistory.au/naval-heritage-sites/beecroft-peninsula-nsw/>. (Accessed on the 7 June 2023)/

Navin, K. 1991, *Archaeological Investigation of Proposed Currumbene Creek Crossing and Associated Road Routes from Woollamia to Callala Beach, Jervis Bay, NSW*. Report to Mitchell McCotter & Associates Pty Ltd.

Navin Officer, 1992. *Archaeological Investigation: APPM Nowra, Shoalhaven River, NSW*.

Navin Officer Heritage Consultants. 2000, *Moona Moona Creek Reclaimed Water Pipeline Crossing, Huskisson, NSW*. Report to Connell Wagner Pty Ltd.

National Heritage Consultants. 2019, *Aboriginal Heritage Assessment 104 Burrill St, Huskisson, NSW (Lots 81 & 104, DP755928) (Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales)*. Report to PDC Lawyers & Planners on behalf of Kingfisher Projects Pty Ltd.

New South Wales Archaeology (Dibden). 2018, *Aboriginal Archaeological Study for Moss vale Road North (MRVN) Urban Release Area*. Report to Allen Price & Scarratts Pty Ltd.

Nicol, G & Sewell, J. 1793, *A Complete Account of the Settlement at Port Jackson in New South Wales, Including An Accurate Description of the Situation of the Colony; of the Natives; and Of Its Natural Productions*. London.

O'Connell, J.F and Allen, J. 2004. Dating the colonization of Sahul (Pleistocene Australia-New Guinea): a review of recent research. *Journal of Archaeological Science* 31:835-853.

OEH 2011. *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW*. OEH, Sydney South.

Robert Paton Archaeological Studies Pty Ltd. 1993, *An Archaeological Survey of the Banks of Currumbene Creek at Myola Village Near Jervis Bay, NSW*. Report to Patterson Britton and Partners Pty Ltd.



Paton, R. and Macfalane, I. 1989. *An Excavation of Abrahams Bosom Rockshelter 1 near Currarong, Jervis Bay, New South Wales*. Report to NSW National Parks and Wildlife Service and the NSW Department of Lands.

Penfold, H. 2017. *Indigenous Geographies of Home at Orient Point, NSW*. University of Wollongong.

Perry, T.M. 1966, 'Berry, Alexander (1781-1873)', *Australian Dictionary of Biography*. National Centre of Biography, Australian National University. Available from <https://adb.anu.edu.au/biography/berry-alexander-1773>

Smith, MA. 2013, *The Archaeology of Australia's Deserts*. Cambridge University Press, New York.

Stockton, ED. 1973. 'Shaws Creek Shelter: Human Displacement of Artefacts and its significance.' *Mankind* 9: 112-117

Stockton, ED. & Holland, WN. 1974. 'Cultural sites and their environment in the Blue Mountains.' *Archaeology and Physical Anthropology in Oceania*. 9:36-65

Sullivan, M.E. 1979. *An Assessment of the Aboriginal Shell Midden at Whale Point, Currarong*. Report to the Shoalhaven City Council and the National Parks and Wildlife Service of New South Wales.

Tindale, N.B. 1974, *Aboriginal Tribes of Australia – Their Terrain, Environmental Controls, Distribution, Limits and Proper Names*. Online resource, accessed from <http://archives.samuseum.sa.gov.au/tribalmmap/index.html>

Wellington, R. 2002, *Enhancement of Bushfire Protection Area Adjacent to Callala Street Residences, at Huskisson, NSW Jervis Bay National Park*. NPWS internal report.



APPENDIX A: CORRESPONDENCE LOG

22200 Wilsons Beach, Abrahams Bosom, NSW – Consultation Log

Date	Type of Consultation	Parties Contacted	Outcome
21/3/2023	Requesting details of Aboriginal individuals or organisations with cultural knowledge of the area and who may wish to participate in consultation (Section 4.1.1 of ACHCRs)	Heritage NSW	29/03/2023 – emailed letter received providing list of Aboriginal Stakeholders for the Shoalhaven Local Government Area
		South East Local Land Services	No response
		Shoalhaven Shire Council	14/05/2023 – Rebecca Bryant from Apex Archaeology received a phone call from Allen Bloxsome (Community Capacity Builder – Aboriginal) advising he had only just received the notification that had been delayed within council admin. Allen wanted to ensure we had registrations for the project. Rebecca advised that the local Aboriginal land council had registered, as have a number of other individuals and organisations. Rebecca also advised she would send the contact details for Heritage NSW so that Allen could advise members of the local Aboriginal community to register as a stakeholder so they are made aware of projects in the area.
		Jerrinja LALC	No response
		NTSCorp	27/03/23-email received from Joe Murphy requesting registration for the South Coast People – native title claimants. Joe requested that all future correspondence be addressed to information@ntscorp.com.au
		ORALRA	No response
		National Native Title Tribunal	29/03/23 – Native Title Claim by South Coast People
12/04/2023	Advertisement for registrations of interest for consultation from Aboriginal people or organisations with cultural knowledge relevant to the area	Advertisement placed in the South Coast Register	
06/04/2023	Letters sent to identified individuals and	Badu (Murrin Clan/Peoples)	No response
		Barraby Cultural Services	No response

<p>organisations from Section 4.1.1 of ACHCRs</p> <p>Letter sent via email if address provided; and by post where email not available</p>	Batemans Bay Local Aboriginal Land Council	No response
	Biamanga (Murrin Clan/Peoples)	No response
	Bilinga (Murrin Clan/Peoples)	No response
	Clive Freeman	No response
	Cullendulla (Murrin Clan/Peoples)	No response
	Darryl Caines	No response
	Darug Land Observations	Bounce back – mailbox is full
	Dharug (Murrin Clan/Peoples)	No response
	Djirringanj Elders Group	11/04/2023 – email registration received from John Dixon
	Eora Heritage Group	No response
	Gadhu Dreaming	No response
	Gary Caines	No response
	Gayle Watts	No response
	Goobah Development PTY LTD (Murrin Clan/Peoples)	No response
	Graham Connolly	No response
	Gumaraa	No response
	Gundungurra Tribal Technical Services	Bounce-back unknown address
	Guntawang Aboriginal Resources Incorporated	12/04/2023 – email received requesting registration
	Gunyu (Murrin Clan/Peoples)	No response
	Guunamaa Dreamin Sites and Surveying	No response
	Jason Davison	No response
	Jerringong (Murrin Clan/Peoples)	No response
	Jerrinja Local Aboriginal Land Council	Automatic Registration as they identified the site disturbance
Kamilaroi Yankuntjatjara Working Group	13/04/2023 – email received requesting registration	
Karrial (Murrin Clan/Peoples)	No response	
Konanggo Aboriginal Cultural Heritage Services	No response	

	Minnamunnung	No response
	Munyunga (Murrin Clan/Peoples)	No response
	Murra Bidgee Mullangari Aboriginal Corporation	10/04/2023 – email received requesting registration
	Murramarang (Murrin Clan/Peoples)	No response
	Murrumbul (Murrin Clan/Peoples)	No response
	A & K Cultural Heritage	No response
	Noel Butler	No response
	Noel Webster	No response
	Nowra Local Aboriginal Land Council	No response
	Nundagurri (Murrin Clan/Peoples)	No response
	Pemulwuy (Murrin Clan/Peoples)	No response
	Ronald Carberry	No response
	Shoalhaven Elders and Friends Organisation	No response
	South Coast NSW Aboriginal Elders	No response
	South West Rocks Aboriginal Corporation	No response
	Thomas Dahlstrom	No response
	Thoorga Nura	No response
	Three Ducks Dreaming Surveying and Consulting	Bounce back – mailbox full
	Tungai Tonghi	No response
	Ulladulla Local Aboriginal Land Council	No response
	Walbunga (Murrin Clan/Peoples)	No response
	Walgalu (Murrin Clan/Peoples)	No response
	Warra Bingi Nunda Gurri	No response
	Wingikara (Murrin Clan/Peoples)	No response
	Woronora Plateau Gundungara Elders Council	No response
	Wullung (Murrin Clan/Peoples)	No response

		Yerramurra (Murrin Clan/Peoples) and Taste of Tradition Native Aboriginal Corporation	No response
		Yukumbruk	No response
		Yurrandaali	No response
		Yurwang Gundana Consultancy Cultural Heritage Services.	No response
		RAW Cultural Healing	19/04/2023 – email received requesting registration
		Sonione Wakabut Rogers	08/04/2023 – email received requesting registration and advising of contact names for his company. Rebecca Bryant replied advising that she has registered him for the project but only one person can be the contact for the company.
		Girragirra Murun Aboriginal Corporation	11/04/23 – email received requesting registration
		Wingarra Wilay Aboriginal Corporation	11/04/2023 – email received requesting registration
24/04/2023	Provision of project information and methodology	Djirringani Elders	No response
		Murra Bidgee Mullangari Aboriginal Corporation	No response
		Guntawang Aboriginal Resources Incorporated	15/05/223 – received an email from Wendy Morgan advising that there might be burials in the midden and that it will be difficult to save the midden due to the state of erosion. Rebecca from Apex Archaeology replied to Wendy by email and advised that she could contact her to discuss this further. Wendy contacted Rebecca by phone and they discussed the necessary caution that must be taken into account when working along coastal areas because there might be human burials. Rebecca asked Wendy how she would like her comments to be included in the report and Wendy advised it is okay to included her name and comments.
		Kamilaroi Yankuntjatjara Working Group	No response
		RAW Cultural Healing	No response
		Sonione Wakabut Rogers	No response

		Girragirra Murun Aboriginal Corporation	No response
		Wingarra Wilay Aboriginal Corporation	No response
		South Coast People	No response
		Jerrinja Local Aboriginal Land Council	No response
03/08/2023	Provision of draft ACHAR for review and comment	Djirringani Elders	No response
		Murra Bidgee Mullangari Aboriginal Corporation	No response
		Guntawang Aboriginal Resources Incorporated	No response
		Kamilaroi Yankuntjatjara Working Group	No response
		RAW Cultural Healing	No response
		Sonione Wakabut Rogers	No response
		Girragirra Murun Aboriginal Corporation	No response
		Wingarra Wilay Aboriginal Corporation	No response
		South Coast People	No response
		Jerrinja Local Aboriginal Land Council	No response



APPENDIX B: STEP 1 LETTERS AND RESPONSES

From: rebecca@apexarchaeology.com.au
To: "undisclosed recipients"
Bcc: adminofficer@oralra.nsw.gov.au; council@shoalhaven.nsw.gov.au; gs.service@lls.nsw.gov.au; heritagemailbox@environment.nsw.gov.au; information@ntscorp.com.au; jlalc@bigpond.com; jlalc17@gmail.com
Subject: Wilsons Beach, Currarong, NSW - Commencement of Aboriginal Cultural Heritage Assessment
Date: Tuesday, 21 March 2023 2:23:23 PM
Attachments: [image001.png](#)
[22200 Wilsons Beach Stage 1 Consultation Letter.pdf](#)

Good afternoon,

Please find attached a letter requesting contact details for any Aboriginal individuals or organisations who may be interested in being consulted for a project at Wilsons Beach, Currarong, NSW within the Shoalhaven (LGA).

Could you please reply by Tuesday 4th April, 2023.

Warm regards,



21 March 2023

Establishing a Register of Interest for an Aboriginal Cultural Heritage Assessment – mitigation of exposed shell midden at Wilsons Beach, Currarong, NSW.

This letter is sent in accordance with Section 4.1.2 of the *Aboriginal cultural heritage consultation requirements for proponents 2010* (ACHCRs) in order to initiate Stage 1 of the Aboriginal consultation process in relation to the above project.

Crown Lands, Department of Planning and Environment, has engaged Apex Archaeology to assist in preparing an Aboriginal Cultural Heritage Assessment (ACHA) for proposed mitigation works to prevent further washout of a shell midden and protect the area from future damage. The midden is located at the base of wooden stairs that access Wilson Beach within Abrahams Bosom Reserve in Currarong, NSW. The study area is within part of Lot 7004 DP1030104, and within the Shoalhaven LGA.

An Aboriginal Heritage Impact Permit (AHIP) is required to allow remediation works to proceed. As such an ACHA must be prepared to support the AHIP application.

A process of Aboriginal community consultation in accordance with the ACHCRs is being initiated by Apex Archaeology on behalf of the proponent. Apex Archaeology will be undertaking a full archaeological assessment under the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*.

In accordance with Section 4.1.2 of the ACHCRs, I am writing to request any information you may have regarding Aboriginal stakeholders who may have cultural knowledge relevant to determining the significance of Aboriginal objects that may be located within the study area. Any identified Aboriginal individuals or organisations will be invited to register an interest in the project and participate in the consultation process.

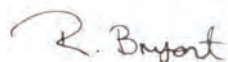
Crown Lands' project office is Bryan Pollock who can be contacted via email at Bryan.pollock@crowland.nsw.gov.au.

Information regarding Aboriginal stakeholders can be sent to PO Box 236, Nowra, NSW 2541, or rebecca@apexarchaeology.com.au.

We would appreciate a response within 14 days of the date of this letter wherever possible.

Kind regards,

Rebecca Bryant



Director/Archaeologist
Apex Archaeology

E: rebecca@apexarchaeology.com.au

M: 0405 236 821

Our reference: Doc23/227744

Rebecca Bryant
Archaeologist
Apex Archaeology
Po Box 236
Nowra NSW 2541

29/03/2023

Dear Rebecca,

WRITTEN NOTIFICATION OF PROPOSAL AS REQUIRED UNDER DECCW ABORIGINAL CULTURAL HERITAGE CONSULTATION REQUIREMENTS FOR PROPONENTS 2010

Subject: Wilson Beach within Abrahams Bosom Reserve in Currarong.

Thank you for your correspondence dated 21 March 2023 to Heritage NSW (Department of Planning and Environment) regarding the above project.

Attached is a list of known Aboriginal Stakeholders for the proposed development at the **Shoalhaven** Local Government Area that Heritage NSW considers likely to have an interest in the activity.

Please note this list is not necessarily an exhaustive list of all interested Aboriginal Stakeholders.

Receipt of this list does not remove the requirement of a proponent/ consultant to advertise in local print media and contact other bodies seeking interested Aboriginal parties, in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (April 2010).

Under Section 4.1.6. of the Consultation Requirements, you must also provide a copy of the names of each Aboriginal person who registered an interest to the relevant Heritage NSW office and Local Aboriginal Land Council (LALC) within 28 days from the closing date for registering an interest.

Please note that the contact details in the list provided by Heritage NSW may be out of date as it relies on Aboriginal stakeholders advising Heritage NSW when their details need changing. If individuals/companies undertaking consultation are aware that any groups contact details are out of date, or letters are returned unopened, please contact either the relevant stakeholder group (if you know their more current details) and/or Heritage NSW. AHIP applicants should make a note of any group they are unable to contact as part of their consultation record.

If you have any questions about this advice, please email:
heritagemailbox@environment.nsw.gov.au or contact (02) 9873 8500.

Yours sincerely



Barry Gunther, Aboriginal Senior Assessment Officer
Environment and Heritage – Heritage NSW
Department of Planning and Environment
Aboriginal Heritage Regulation Branch – South Heritage NSW

Attachment A:

Registered Aboriginal Interests DPE Aboriginal Stakeholders List for the **Shoalhaven** local Government Area.

From: rebecca@apexarchaeology.com.au
To: "NTSCORP Notifications"
Cc: "Sandy Chalmers"; "Alexander Read"
Subject: RE: Wilsons Beach, Currarong, NSW - Commencement of Aboriginal Cultural Heritage Assessment
Date: Monday, 27 March 2023 11:24:15 AM
Attachments: [image002.png](#)
[image004.png](#)

Hi Joe,

Thank you for your reply.

I have registered The South Coast People for this project. I will be in touch shortly with more information via the information@ntscorp.au as requested.

Warm regards,

Rebecca

From: NTSCORP Notifications <notifications@ntscorp.com.au>
Sent: Monday, March 27, 2023 10:25 AM
To: rebecca@apexarchaeology.com.au
Cc: Sandy Chalmers <schalmers@ntscorp.com.au>; Alexander Read <ARead@ntscorp.com.au>
Subject: FW: Wilsons Beach, Currarong, NSW - Commencement of Aboriginal Cultural Heritage Assessment

Hi Rebecca,

Thank you for providing the attached notice.

NTSCORP requests that you register the Applicant for the South Coast People's native title application, on behalf of the South Coast People, as knowledge holders for this project and a party to be notified and involved throughout the assessment process.

The South Coast People are the registered native title claimants for this region and are contactable via their legal representatives Sandy Chalmers, Clare Barcham and Alex Read at information@ntscorp.com.au. Please send all correspondence to this address **only**.

In relation to the project notified, please can you confirm if and when Aboriginal knowledge holders are intended to be involved in field surveys, test excavations or any form of cultural heritage monitoring. It is the Applicant's position that such work should be undertaken by people who are members of the South Coast People's native title application, as the relevant native title claimants and custodians of the cultural sites and artefacts in the area considered by this project.

Following confirmation of the above, the Applicant will provide nominations for Aboriginal knowledge holders to be engaged on behalf of the South Coast People.

Kind regards,

Joe Murphy | Law Graduate



NTSCORP proudly acknowledge that our office is situated on the country of the Gadigal People of the Dharug Nation.

We also acknowledge and pay our respect to their Elders past and present.

-
| f 02 9310 4177 | t 61 2 9310 3188

e jmurphy@ntscorp.com.au | w www.ntscorp.com.au

Level 1, 44-70 Rosehill Street, Redfern, NSW 2016 Australia

NTSCORP is committed to supporting local Aboriginal businesses where possible through the purchase of goods and services.

Caution: This message is intended only for the addressee. It is confidential and may be legally privileged. If you are not the intended recipient, any disclosure, copying, or distribution is prohibited and may be unlawful. By opening any attachment, you agree that NTSCORP Limited (NTSCORP) will not be liable for any loss resulting from viruses or other defects. Any views in this message are those of the individual sender, except where the sender expressly and with authority, states them to be the views of NTSCORP.

Please consider the environment before printing this email

From: rebecca@apexarchaeology.com.au <rebecca@apexarchaeology.com.au>

Sent: Tuesday, 21 March 2023 2:23 PM

To: 'undisclosed recipients' <jenni@apexarchaeology.com.au>

Subject: Wilsons Beach, Currarong, NSW - Commencement of Aboriginal Cultural Heritage Assessment

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon,

Please find attached a letter requesting contact details for any Aboriginal individuals or organisations who may be interested in being consulted for a project at Wilsons Beach, Currarong, NSW within the Shoalhaven (LGA).

Could you please reply by Tuesday 4th April, 2023.

Warm regards,



From: rebecca@apexarchaeology.com.au
To: ["Allen Bloxsome"](#)
Subject: Heritage NSW - Contact Details.
Date: Monday, 15 May 2023 12:35:26 PM
Attachments: [image001.png](#)

Hi Allen,

I found your email address!

As mentioned to you, the overwhelming majority of contact details for Aboriginal groups and individuals who wish to be contacted about projects that require community consultation are received from Heritage NSW. Heritage NSW provides me with a list of Aboriginal stakeholders by Local Government Area. I then send invitations to those on the list inviting them to register for the project. Once members of the Aboriginal community are registered, they will be included in all consultation steps and kept up-to-date on the progress of the project.

This is the email address I use for all enquires. You could pass this on to people who wish to be on the Heritage NSW stakeholder list.

heritagemailbox@environment.nsw.gov.au

Have a good day.

Warm regards,

Rebecca





APPENDIX C: STEP 2 LETTERS AND RESPONSES

6 April 2023

Establishing a Register of Interest for an Aboriginal Cultural Heritage Assessment – Proposed mitigation of exposed shell midden at Wilsons Beach, Currarong, NSW

This letter is sent in accordance with Section 4.1.2 of the *Aboriginal cultural heritage consultation requirements for proponents 2010* (ACHCRs) in order to initiate Stage 1 of the Aboriginal consultation process in relation to the above project.

Crown Lands, Department of Planning and Environment, has engaged Apex Archaeology to assist in preparing an Aboriginal Cultural Heritage Assessment (ACHA) for proposed mitigation works to prevent further washout of a shell midden and protect the area from future damage. The midden is located at the base of wooden stairs that access Wilsons Beach within Abrahams Bosom Reserve in Currarong, NSW (Figure 1). The study area is within part of Lot 7004 DP1030104, and within the Shoalhaven LGA.

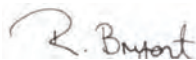
An Aboriginal Heritage Impact Permit (AHIP) is required to allow remediation works to proceed. As such an ACHA must be prepared to support the AHIP application. The purpose of consultation with Aboriginal people for this project is to assist the proponent the preparation of an application for an AHIP and to assist the Secretary in their consideration and determination of the AHIP application.

The proponent invites Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and places within the study area to register an interest in the process of Aboriginal community consultation. **Please consider whether it is culturally appropriate for you to be consulted for this project prior to registering your interest in consultation.**

Please also note that details of the Aboriginal people or organisations who register an interest in consultation will be forwarded to both Heritage NSW and the Jerrinja Local Aboriginal Land Council (JLALC). Please advise at the time of registration if you do not wish for your details to be forwarded to either entity.

The project officer for Crown Lands is Bryant Pollock, who can be contacted via email at Bryan.pollock@crowland.nsw.gov.au. Information regarding Aboriginal stakeholders can be sent to PO Box 236, Nowra, NSW 2541, or rebecca@apexarchaeology.com.au. I am available to assist with any inquiries about the process and can be contacted by telephone on 0405 236 821. Registrations of interest will be accepted until close of business, **Friday 21 April 2023**.

Kind regards,
Rebecca Bryant



Archaeologist
Apex Archaeology
E: rebecca@apexarchaeology.com.au
M: 0405 236 821



Figure 1. Approximate location of proposed mitigation works indicted by flag circled in red (Source: Six Maps NSW Government 2023)

From: rebecca@apexarchaeology.com.au
To: "undisclosed recipients"
Bcc: aandkculturalheritage@gmail.com; baduchts@gmail.com; barrabyculturalservices@gmail.com; begadel@yahoo.com; biamangachts@gmail.com; billingachts@gmail.com; bunjil.smith@gmail.com; clive.freeman@y7mail.com; cullendullachts@gmail.com; darrylcaines8@gmail.com; daruglandobservations@gmail.com; davokad26@gmail.com; धारुगचत्स@gmail.com; Eora_group20@hotmail.com; gamila.roi@yahoo.com.au; garycaines87@gmail.com; gayle.w@hotmail.com; girragirramurun@yahoo.com; goobahchts@gmail.com; gordy2540@hotmail.com; gundungurractribesevices@gmail.com; gunyuuchts@gmail.com; jerringong@gmail.com; jerrinja55@gmail.com; jlalc@bigpond.com; jlalc17@gmail.com; karrialchts@gmail.com; kayla_87@hotmail.com; konanggo_consultancy@hotmail.com; lbjwright1977@hotmail.com; munyangachts@gmail.com; murrabidgeemullangari@yahoo.com.au; murramarangchts@gmail.com; murrumbul@gmail.com; ngunawal56@outlook.com; noelwebster2@bigpond.com; nundagurri@gmail.com; nuragunyu@gmail.com; oldmanwisdomgumaraa@gmail.com; owen.fpfs@gmail.com; Pemulwuyd@gmail.com; philipkhan.acn@live.com.au; RAW.CulturalHealing@hotmail.com; richardcampbell123@outlook.com; sonionerogers@yahoo.com; sw0499049913@gmail.com; swrac@hotmail.com; thoorganura@gmail.com; Troytungai72@outlook.com; Walbunja@gmail.com; waigalchts@gmail.com; warrabingi@gmail.com; Wenlissa01@hotmail.com; wingarrawilay@yahoo.com; [wingikarachts@gmail.com](mailto>wingikarachts@gmail.com); wullunglb@gmail.com; yerramura@gmail.com; yurraandaali_cs@hotmail.com; Yurwang.Gundana.C.H.S@outlook.com
Subject: RE: Wilsons Beach, Currarong, NSW - Commencement of Aboriginal Cultural Heritage Assessment
Date: Thursday, 6 April 2023 3:13:01 PM
Attachments: [image001.png](#)
[22200 Wilsons Beach,Currarong - Stakeholder Invitation 6Apr23.pdf](#)

Good afternoon,

Your details have been provided by Heritage NSW as an Aboriginal person or organisation who might like to take part in consultation for a project at Wilsons Beach, Currarong, NSW.

Please find attached a letter with more information and inviting you to register your interest by the close of business, Friday 21st April 2023

Please get in touch if you have any questions. I look forward to hearing from you.

Warm regards,

Rebecca



Rebecca Bryant
ARCHAEOLOGIST

0405 236 821

REBECCA@APEXARCHAEOLOGY.COM.AU

WWW.APEXARCHAEOLOGY.COM.AU

From: [Rebecca Bryant](mailto:rebecca@apexarchaeology.com.au)
To: rebecca@apexarchaeology.com.au
Subject: By mail
Date: Thursday, 6 April 2023 3:31:08 PM



From: rebecca@apexarchaeology.com.au
To: ["john dixon"](#)
Cc: ["undisclosed recipients"](#)
Subject: Wilsons Beach Currarong
Date: Tuesday, 11 April 2023 9:12:00 AM
Attachments: [image001.png](#)

Good morning John,

Thank you for your email and for sharing some of your family's history to the area.

I have registered Djirringanj Elders Federation for his project and will be in touch shortly with more information.

Warm regards,

Rebecca



rebecca@apexarchaeology.com.au

From: rebecca@apexarchaeology.com.au
Sent: Wednesday, 12 April 2023 8:04 AM
To: 'Girra Murun'
Subject: RE: Wilsons Beach, Currarong, NSW - Commencement of Aboriginal Cultural Heritage Assessment

Good morning Diana,

I have registered Girragirra Murun Aboriginal Corporation for this project and will be in touch shortly with more information.

Warm regards,

Rebecca

From: Girra Murun <girragirramurun@yahoo.com>
Sent: Tuesday, April 11, 2023 3:40 PM
To: rebecca@apexarchaeology.com.au
Subject: Re: Wilsons Beach, Currarong, NSW - Commencement of Aboriginal Cultural Heritage Assessment

Good afternoon Rebecca,

Thank you for the invite. I would like to register my Company Girragirra Murun as a (RAP) for the Consultation process for the project at Wilson's Beach Currarong NSW.

Should you require any other information please don't hesitate to contact me.

Warm wishes

Diana Astin
Director - Contact Person
Girragirra Murun Aboriginal Corporation
PO box 981
Ulladulla NSW 2539
ABN: 84658252772
MB: 0433837512
EMAIL: girragirramuran@yahoo.com

On Thursday, 6 April 2023 at 03:13:06 pm GMT+10, <rebecca@apexarchaeology.com.au> wrote:

Good afternoon,

Your details have been provided by Heritage NSW as an Aboriginal person or organisation who might like to take part in consultation for a project at Wilsons Beach, Currarong, NSW.

Please find attached a letter with more information and inviting you to register your interest by the close of business, **Friday 21st April 2023**

Please get in touch if you have any questions. I look forward to hearing from you.

Warm regards,

Rebecca



Rebecca Bryant
ARCHAEOLOGIST

0405 236 821

REBECCA@APEXARCHAEOLOGY.COM.AU

WWW.APEXARCHAEOLOGY.COM.AU

rebecca@apexarchaeology.com.au

From: rebecca@apexarchaeology.com.au
Sent: Friday, 14 April 2023 8:43 AM
To: 'Wendy Morgan'
Subject: RE: Wilsons Beach, Currarong, NSW - Commencement of Aboriginal Cultural Heritage Assessment

Hi Wendy,

Thank you for your email and additional information regarding your sites officers. I have registered Guntawang Aboriginal Resources for this project and will be in touch shortly with more information.

Warm regards,

Rebecca

From: Wendy Morgan <wenlissa01@hotmail.com>
Sent: Wednesday, April 12, 2023 11:25 AM
To: rebecca@apexarchaeology.com.au
Subject: RE: Wilsons Beach, Currarong, NSW - Commencement of Aboriginal Cultural Heritage Assessment

Hi Rebecca,

Guntawang Aboriginal Resources Inc would like to express an interest in the Wilsons Beach Currarong NSW.

Guntawang has a senior Aboriginal Sites Officers who would benefit your project he has years of experience to offer.

Kind regards

Wendy Morgan
CEO GARI
0414 964 657

Sent from [Mail](#) for Windows

From: rebecca@apexarchaeology.com.au
Sent: Thursday, 6 April 2023 3:13 PM
To: '[undisclosed recipients](#)'
Subject: RE: Wilsons Beach, Currarong, NSW - Commencement of Aboriginal Cultural Heritage Assessment

Good afternoon,

Your details have been provided by Heritage NSW as an Aboriginal person or organisation who might like to take part in consultation for a project at Wilsons Beach, Currarong, NSW.

Please find attached a letter with more information and inviting you to register your interest by the close of business, **Friday 21st April 2023**

Please get in touch if you have any questions. I look forward to hearing from you.

Warm regards,

Rebecca



Rebecca Bryant
ARCHAEOLOGIST

0405 236 821

REBECCA@APEXARCHAEOLOGY.COM.AU

WWW.APEXARCHAEOLOGY.COM.AU

rebecca@apexarchaeology.com.au

From: rebecca@apexarchaeology.com.au
Sent: Friday, 14 April 2023 8:58 AM
To: 'Phil Khan'
Subject: RE: Wilsons Beach, Currarong, NSW - Commencement of Aboriginal Cultural Heritage Assessment

Good morning Phil,

Thank you for your email and the additional information. I have registered KYWG for this project and will be in touch shortly with the information and methodology.

Warm regards,

Rebecca

From: Phil Khan <philipkhan.acn@live.com.au>
Sent: Thursday, April 13, 2023 2:21 PM
To: rebecca@apexarchaeology.com.au
Subject: RE: Wilsons Beach, Currarong, NSW - Commencement of Aboriginal Cultural Heritage Assessment

Hi Rebecca,

Thank you for informing us that **Apex Archaeology** will be involved in an Aboriginal Cultural Heritage Assessment at the **Wilsons Beach, Currarong, NSW** & that you are inviting Aboriginal organisations to register, if they wish too be involved in the community consultation process.

As a senior Aboriginal person for the past 50yrs, I actively participate in the protection of the Aboriginal Cultural Heritage throughout the Sydney Basin, & particularly throughout Western Sydney, on behalf of Kamilaroi Yankuntjatjara Working Group I wish to provide to you my organisation's registration of interest.

I wish to be involved & participate in all levels of consultation/project involvement. I wish to attend all meetings, site surveys, participate in available field work & receive a copy of the report.

I have attached a copy of Kamilaroi Yankuntjatjara Working group's Public Liability Insurance & Workers Compensation certificate.

Our Rates - \$450 half day & \$900 full day (Exc. GST)

Our RAPS have up to 15yrs Cultural Heritage experience in – field work which involves manual excavation (digging), sieving, identifying artefacts, setting up transits, setting up equipment, packing equipment, site surveys & attending meetings.

Should you wish me to provide further information, please do not hesitate to contact me on 0434545982 or Stefeanie on 0451068480.

Kind Regards

Phil Khan – Director

P 0434545982

E philipkhan.acn@live.com.au



From: rebecca@apexarchaeology.com.au

Sent: Thursday, 6 April 2023 3:13 PM

To: '[undisclosed recipients](#)'

Subject: RE: Wilsons Beach, Currarong, NSW - Commencement of Aboriginal Cultural Heritage Assessment

Good afternoon,

Your details have been provided by Heritage NSW as an Aboriginal person or organisation who might like to take part in consultation for a project at Wilsons Beach, Currarong, NSW.

Please find attached a letter with more information and inviting you to register your interest by the close of business, **Friday 21st April 2023**

Please get in touch if you have any questions. I look forward to hearing from you.

Warm regards,

Rebecca



Rebecca Bryant
ARCHAEOLOGIST

0405 236 621

REBECCA@APEXARCHAEOLOGY.COM.AU

WWW.APEXARCHAEOLOGY.COM.AU

From: rebecca@apexarchaeology.com.au
To: "Ryan Johnson"
Subject: RE: Wilsons Beach, Currarong, NSW - Commencement of Aboriginal Cultural Heritage Assessment
Date: Tuesday, 11 April 2023 9:29:05 AM

Good morning Ryan,

I have registered Murra Bidgee Mullangari for this project and will be in touch with more information shortly.

Warm regards,

Rebecca

From: Ryan Johnson <murrabidgeemullangari@yahoo.com.au>
Sent: Monday, April 10, 2023 11:27 AM
To: rebecca@apexarchaeology.com.au
Subject: Re: Wilsons Beach, Currarong, NSW - Commencement of Aboriginal Cultural Heritage Assessment

Please register our company for the above project

Cheers

Ryan johnson

On 6 Apr 2023, at 3:13 pm, rebecca@apexarchaeology.com.au wrote:

Good afternoon,

Your details have been provided by Heritage NSW as an Aboriginal person or organisation who might like to take part in consultation for a project at Wilsons Beach, Currarong, NSW.

Please find attached a letter with more information and inviting you to register your interest by the close of business, Friday 21st April 2023

Please get in touch if you have any questions. I look forward to hearing from you.

Warm regards,

Rebecca

<image001.png>

<22200 Wilsons Beach,Currarong - Stakeholder Invitation 6Apr23.pdf>



RAW Cultural Healing

ABN 72 519 352 822 (GST Registered)

PL LCS017124781-4409

PI LPS016832716-17823

WC 186335101

M. 0411 962 602

E. RAW.CulturalHealing@hotmail.com

[7 Moonbria Pl, Airs NSW 2560](#)

P. PO Box N74, Campbelltown North NSW 2560

Rebecca Bryant
Archaeologist
Apex Archaeology
PO Box 236,
Nowra, NSW 2541
rebecca@apexarchaeology.com.au
0405 236 821

19 April 2023

Dear Ms Bryant,

I would like to register RAW Cultural Healing's interest on all levels of involvement in the Aboriginal Cultural Heritage Assessment Proposed mitigation of exposed shell midden at Wilsons Beach, Currarong, NSW. I prefer to have any written communication emailed to RAW.CulturalHealing@hotmail.com.

My name is Raymond Weatherall, I am a Gomeroi man with vast knowledge and experience in Cultural Heritage Assessments and participated in assessments for Aboriginal Heritage Impact Permits (AHIP) and Environmental Impact Statements (EIS). I have done site work for various projects over the years, as an individual RAP and as a Gomeroi Native Title Applicant. I also have permission from Traditional Custodians in various areas, including this one, to do Cultural Heritage Assessments due to my cultural knowledge and experience in Aboriginal cultural heritage values determining the significance of Aboriginal objects and places.

My connection to this Country stems from ceremony and shared knowledge through ceremony. My songlines connect through the river systems and Significant sites we have on this Country. I continually sit with knowledge holders on Tharawal, Yuin and Yuin Monaro Country to continue my learning as my blood uncle married a Traditional Custodian of this land. I spent many years in Jerrinja and Wreck Bay Aboriginal communities, I regularly visited this Country growing up with my cousins and continue to visit my family to continue my childrens' connection to this land, family and culture. Cultural knowledge was shared throughout our lives so that we can pass this on to our children. We were privileged to learn about songlines, the land and cultural sites.

I have a GST registered ABN with Public Liability insurance, Comprehensive Car insurance and Workers Compensation insurance. I am also listed in Office of Environment & Heritage (OEH) for Aboriginal Heritage in the Heritage Consultants directory. RAW Cultural Healing also has other Cultural Officers that are also knowledge holders of Tharawal Yuin and Yuin Monaro area.

My details are as Follows:

RAW Cultural Healing
Raymond Weatherall
ABN 72 519 352 822 (GST Registered)
PL LCS017124781-4409

PI LPS016832716-17823

WC 186335101

M. 0411 962 602

E. RAW.CulturalHealing@hotmail.com

A. 8 Rosslyn Dr, Claymore NSW 2559

P. PO Box N74, Campbelltown North NSW 2560

Please contact me directly on the information above if you have any questions

Kind Regards

Raymond Weatherall

Cultural Officer

19/04/23

From: rebecca@apexarchaeology.com.au
To: ["Sonione Rogers"](#)
Subject: RE: Wilsons Beach
Date: Tuesday, 11 April 2023 9:03:54 AM

Good morning Sonione,

Thank you for your email and additional information. I have registered Soinone Wakabut Rogers for this project and you as the contact. As per HNSW Heritage guidelines there can be only one registered contact person per organisation.

I will be in contact shortly with more information.

Warm regards,

Rebecca

From: Sonione Rogers <sonionerogers@yahoo.com>
Sent: Saturday, April 8, 2023 12:04 PM
To: rebecca@apexarchaeology.com.au
Subject: Wilsons Beach

Afternoon Rebecca I wish to register for this upcoming site work, please find attached insurance. let me know how many Reps i can bring. I Usually have two at a time.

Contact Names for my company will be.

- Sonione Rogers -0455249790
- Tyrone Robinson
- Darnel Williams Coe
- Dana Abedelmutaal

Rate of \$150 per hour, Food an travel Allowance \$100 pp. if accommodation is required then reimbursement will be required,

if you have any further questions email me or give me a Ring on 0455249790

rebecca@apexarchaeology.com.au

From: rebecca@apexarchaeology.com.au
Sent: Wednesday, 12 April 2023 7:59 AM
To: 'Ray Moon'
Subject: RE: Wilsons Beach, Currarong, NSW - Commencement of Aboriginal Cultural Heritage Assessment

Good morning Ray.

I have registered Wingarra Wilay for this project and will be in touch soon with more information.

Warm regards,

Rebecca

From: Ray Moon <wingarrawilay@yahoo.com>
Sent: Tuesday, April 11, 2023 3:35 PM
To: rebecca@apexarchaeology.com.au
Subject: Re: Wilsons Beach, Currarong, NSW - Commencement of Aboriginal Cultural Heritage Assessment

Good afternoon Rebecca,

I would like to register Wingarra Wilay as a RAP for the proposed project and Consultation for the project at Wilson's Beach Currarong NSW.

Please let me know if you require anything further.

Kind Regards

Ray

On Thursday, 6 April 2023 at 03:13:07 pm GMT+10, rebecca@apexarchaeology.com.au <rebecca@apexarchaeology.com.au> wrote:

Good afternoon,

Your details have been provided by Heritage NSW as an Aboriginal person or organisation who might like to take part in consultation for a project at Wilsons Beach, Currarong, NSW.

Please find attached a letter with more information and inviting you to register your interest by the close of business, **Friday 21st April 2023**

Please get in touch if you have any questions. I look forward to hearing from you.

Warm regards,

Rebecca



Rebecca Bryant
ARCHAEOLOGIST

0405 236 621

REBECCA@APEXARCHAEOLOGY.COM.AU

WWW.APEXARCHAEOLOGY.COM.AU



APPENDIX D: ADVERTISEMENT

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Phone: 4421 9100

Email: classifieds@southcoastregister.com.au



South Coast Register

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 Advertising self service enquiries: acmadonline@autocommunitymedia.com.au
 Emoji now available



Self Service

Public Notices

Aboriginal Cultural Heritage Assessment: Mitigation works for exposed shell midden at Wilsons Beach, Currarong, NSW Notification and Registration of Aboriginal Interests

Crown Lands, Department of Planning and Environment has engaged Apex Archaeology to assist in preparing an Aboriginal Cultural Heritage Assessment (ACHA) for proposed mitigation works to prevent further washout of a shell midden and protect the area from future damage. The midden is located at the base of wooden stairs that access Wilsons Beach within Abrahams Bosom Reserve in Currarong, NSW. The study area is within part of Lot 7004 DP1030104, and within the Shoalhaven LGA.

An Aboriginal Heritage Impact Permit (AHIP) is required to allow remediation works to proceed. As such an ACHA must be prepared to support the AHIP application.

A process of Aboriginal community consultation in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010* is being initiated by Apex Archaeology. The purpose of consultation with Aboriginal people is to assist the proponent in the preparation of an application for an AHIP and to assist the Department of Premier and Cabinet Secretary in their consideration and determination of the application.

The proponent invites Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and places within the study area to register an interest in the process of Aboriginal community consultation.

Please note that details of the Aboriginal people or organisations who register an interest in consultation will be forwarded to Heritage NSW and Jerrinja Local Aboriginal Land Council (JLALC). Please advise at the time of registration if you do not wish for your details to be forwarded to these entities.

The project manager is Bryan Pollock who can be contacted via email at Bryan.pollock@crowland.nsw.gov.au. Aboriginal stakeholders can register their interest by post to PO Box 236, Nowra, NSW 2541; via phone on 0405 236 821; or via rebecca@apexarchaeology.com.au. Please include the name and contact details of your preferred contact person in your registration.

Registrations will be accepted until COB Wednesday 26 April 2023.

Public Notices

Shoalhaven City Council shoalhaven.nsw.gov.au

Public Notice

Proposed Regional Development RA23/1000

The following Application has been received by Shoalhaven City Council seeking approval for:

Proposal: Staged Expansion of the Nowra Private Hospital

Property: 9 Weeroona Place, Nowra – Lot 32 DP 814820, 14 McKenzie Street, Nowra – Lot 19 DP 241075, 12 McKenzie Street, Nowra – Lot 20 DP 241075, 10 McKenzie Street, Nowra – Lot 21 DP 241075, 8 McKenzie Street, Nowra – Lot 22 DP 241075, 6 McKenzie Street, Nowra – Lot 23 DP 241075, and 4 McKenzie Street, Nowra – Lot 24 DP 241075

Applicant: Patch Planners Pty Ltd

Determining Authority: Regional Planning Panel – Southern

The proposed development as outlined above is Regional Development having regard to Section 5(b), Schedule 6 of the State Environmental Planning Policy (Planning Systems) 2021, being development that has a capital investment value of more than \$5 million for 'health services facilities'.

The application and associated documents can be accessed on Council's website www.shoalhaven.nsw.gov.au by following the Development Application Tracking link (Track a DA) from Wednesday, 12 April 2023 to Friday, 12 May 2023.

Any person during the above exhibition period may make a written submission in relation to the development application detailing reasons for objection or support (making reference to RA23/1000).

Submissions will be accepted on or before Friday, 12 May 2023 or may be made online using the DA Tracking link on Council's website www.shoalhaven.nsw.gov.au

For information on the display of submissions, obligations to declare reportable political donations, submitting pre-printed form letters and petitions refer to Council's 'Community Consultation Policy for Development Applications' which is available on Council's website under 'Policies'.

Further enquiries on this matter should be directed to Council's City Development Directorate on 1300 293 111.

Death Notices

PASTOR, Johanna Cornelia (Sonja)

Late of Berry. Passed away peacefully on 2 April 2023, aged 92 years.



Beloved wife of Antonius 'Toon' Franciscus Pastor (dec). Dearly loved mother and mother-in-law of Bob & Jenny, Tom & Rhonda (dec), Sonja and Helena. Loving Oma of grandchildren Dana, Holly, Jack, Hannah, Nick, Oceana, Bodhi, Leo, Goth, Sophie, Jaya & Felix and great grandmother of Mitchell, Leonardo, Oscar, Evie, Bridie & Patrick with one more on the way.

"Sterkte Moeder"

Sonja will be privately cremated, and a celebration of her life will be held in the near future.

Shoalhaven City Council shoalhaven.nsw.gov.au

Expression of Interest

Membership – Youth Advisory Committee

Are you a young person aged 12–25 years with an interest in driving change and being a voice for young people in the Shoalhaven? Then apply now for Shoalhaven City Council's Youth Advisory Committee.

This is an exciting opportunity to bring your experiences and ideas and offer a fresh and unique perspective to the Committee. The Youth Advisory Committee is an inclusive space which allows individuals from diverse and varied backgrounds to work together to drive change for the young people of the Shoalhaven and have an impact on how they live, work and play in our community.

Council is calling for Expressions of Interest (EOI) for Membership on the Youth Advisory Committee for the following vacant position:

- **Five (5) Community Youth Representatives**

To fill these vacant positions, Council is seeking young people aged 12–25 years, from the North, Central and South of the LGA, who meet the following criteria:

- A broad interest and understanding of youth issues in the Shoalhaven.
- A commitment to raising awareness and appreciation within the general community of the needs and talents of young people.
- Local resident living or working within the Shoalhaven.

The Committee's Terms of Reference and the application form can be found on the Council's website.

Shoalhaven City Council encourages applications from Aboriginal community members.

To submit your EOI, complete the form and return it via email to council@shoalhaven.nsw.gov.au

For enquiries: Please contact Jessica Richardson, Shoalhaven City Council on 02 4429 3657.

EOI closing date: Tuesday, 2 May 2023.

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 Top cash on the spot
 Fast pick up
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100% Free towing

*conditions apply



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Self Service

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APPENDIX E: METHODOLOGY, COVER LETTERS AND RESPONSES

WILSONS BEACH, CURRARONG, NSW

METHODOLOGY AND PROJECT INFORMATION

LGA: Shoalhaven City Council

May 2023





Apex Archaeology would like to acknowledge the Aboriginal people who are the traditional custodians of the land in which this project is located. Apex Archaeology would also like to pay respect to Elders both past and present.

DOCUMENT CONTROL

The following register documents the development and issue of the document entitled 'Wilsons Beach, Currarong, NSW – Methodology and Project Information', prepared by Apex Archaeology in accordance with its quality management system.

Revision	Prepared by	Reviewed by	Comment	Issue Date
1 – Draft	Rebecca Bryant	Jenni Bate	RAP review	24 April 2023
2 - Final	Jenni Bate	RAPs	Finalisation	24 May 2023



GLOSSARY OF TERMS

Aboriginal Object	An object relating to the Aboriginal habitation of NSW (as defined in the NPW Act), which may comprise a deposit, object or material evidence, including Aboriginal human remains.
ACHA	Aboriginal Cultural Heritage Assessment
ACHCRs	The DECCW April 2010 <i>Aboriginal cultural heritage consultation requirements for proponents 2010</i>
AHIMS	Aboriginal Heritage Information Management System maintained by Heritage NSW, detailing known and registered Aboriginal archaeological sites within NSW
AHIP	Aboriginal Heritage Impact Permit
BP	Before Present, defined as before 1 January 1950.
Code of Practice	The DECCW September 2010 <i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i>
Consultation	Aboriginal community consultation in accordance with the DECCW April 2010 <i>Aboriginal cultural heritage consultation requirements for proponents 2010</i> . Consultation is not a required step in a due diligence assessment; however, it is strongly encouraged to consult with the relevant Local Aboriginal Land Council and to determine if there are any Aboriginal owners, registered native title claimants or holders, or any registered Indigenous Land Use Agreements in place for the subject land
DA	Development Application
DECCW	The Department of Environment, Climate Change and Water – now Heritage NSW
Disturbed Land	If land has been subject to previous human activity which has changed the land's surface and are clear and observable, then that land is considered to be disturbed
Due Diligence	Taking reasonable and practical steps to determine the potential for an activity to harm Aboriginal objects under the <i>National Parks and Wildlife Act 1974</i> and whether an application for an AHIP is required prior to commencement of any site works, and determining the steps to be taken to avoid harm
Due Diligence Code of Practice	The DECCW Sept 2010 <i>Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales</i>
GIS	Geographical Information Systems
GSV	Ground Surface Visibility
Heritage NSW	Heritage NSW in the Department of Premier and Cabinet, responsible for heritage matters within NSW
Harm	To destroy, deface or damage an Aboriginal object; to move an object from land on which it is situated, or to cause or permit an object to be harmed
LALC	Local Aboriginal Land Council
LGA	Local Government Area
NPW Act	NSW <i>National Parks and Wildlife Act 1974</i>
OEH	Office of Environment and Heritage – now Heritage NSW
RAPs	Registered Aboriginal Parties



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1.0 INTRODUCTION

Crown Lands, Department of Planning and Environment, has engaged Apex Archaeology to assist in preparing an Aboriginal Cultural Heritage Assessment (ACHA) for proposed mitigation works to prevent further washout of a shell midden at Wilsons Beach within Abrahams Bosom Reserve, Currarong.

A process of Aboriginal community consultation in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010* (the ACHCRs) has been initiated by Apex Archaeology.

The following document provides information about the project, and outlines the detailed methodology for cultural heritage assessment and field survey that Apex Archaeology will be utilising for this project, along with the proposed heritage management activities. It has been developed to address requirements of Section 4.3 in the ACHCRs. The assessment would also be undertaken in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (the Code of Practice).

1.1 STUDY AREA AND PROJECT BRIEF

The study area is at Wilsons Beach within Abrahams Bosom Reserve in Currarong, NSW (Figure 1 and Figure 2). It is located approximately 30 km southwest of Nowra and approximately 35 km south of Gerringong, and is within the Shoalhaven LGA. The study area is within part of Lot 7004 DP1030104.

A shell midden at the base of wooden stairs that access Wilsons Beach has been partially washed out by incoming tides. It requires mitigation measures to prevent further impact. An Aboriginal Heritage Impact Permit (AHIP) is required to allow these remediation works to be undertaken. As such, an Aboriginal Cultural Heritage Assessment is necessary to inform the AHIP application.

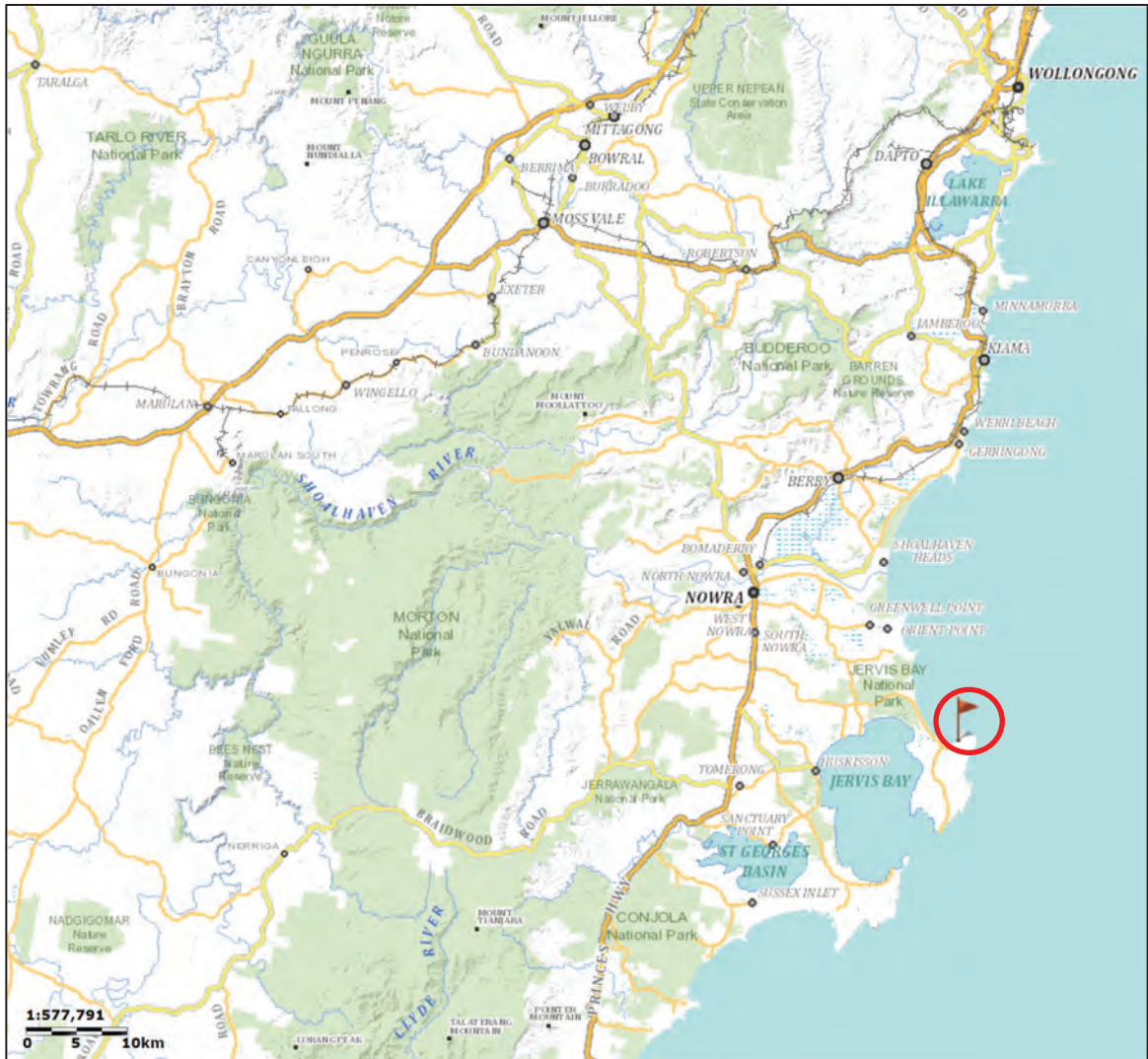


Figure 1: Study area (circled in red) in its regional context (Source: Six Maps NSW Government 2022)



Figure 2: Base of stairs leading onto Wilsons Beach showing erosion of potential shell midden (Source: NSW Crown Lands)



1.2 PURPOSE OF CONSULTATION

In accordance with the ACHCRs, the purpose of consultation with Aboriginal people and organisations is to:

- Understand Aboriginal people's views and concerns about the proposed project;
- Understand the Aboriginal cultural heritage values present within the area;
- Assist in gathering relevant information about the cultural significance and values of the area;
- Consider cultural and scientific significance and values as part of the design of the methodology;
- Assist in developing cultural heritage management options and recommendations for the area; and
- To assist the Chief Executive in their consideration and determination of any AHIP application that may be required.

Please note, Section 3.4 of the ACHCRs states the following:

The consultation process involves getting the views of, and information from, Aboriginal people and reporting on these. It is not to be confused with other field assessment processes involved in preparing a proposal and an application. Consultation does not include the employment of Aboriginal people to assist in field assessment and/or site monitoring. Aboriginal people may provide services to proponents through a contractual arrangement however, this is separate from consultation...The proponent is not obligated to employ those Aboriginal people registered for consultation. Consultation as per these requirements will continue irrespective of potential or actual employment opportunities for Aboriginal people.

Reasonable costs will be paid by the proponent to any Aboriginal people engaged to assist with site inspections or other activities which may be required, such as salvage excavation. However, these activities are separate to the consultation process and do not form part of the process itself.

1.3 COVID POLICIES

Apex Archaeology takes the safety of our staff and the wider community very seriously. All recommendations from both the NSW Government and NSW Health will be implemented as necessary, including social distancing, wearing of masks, limiting the number of participants in meetings, ensuring adequate locations for meetings are selected if they should occur, and any other restrictions that may be implemented. As such, we are encouraging communications via phone, email, post, or video conferencing as appropriate.



2.0 CULTURAL HERITAGE ASSESSMENT

Apex Archaeology recognises that “Aboriginal people are the primary determinants of the cultural significance of their heritage” (DECCW 2010). As such, Apex Archaeology will undertake consultation with the Aboriginal community to provide an opportunity for cultural knowledge relating to the study area to be recorded and included in the Cultural Heritage Assessment.

2.1 FULL ASSESSMENT

A full assessment would comprise production of an Aboriginal Cultural Heritage Assessment Report (ACHAR) to meet the ACHCRs and an Archaeological Report (AR) to meet the Code of Practice requirements.

The ACHAR would outline the results of the Aboriginal community consultation while the AR would detail the results of the Aboriginal archaeological assessment of the study area. The reports would be prepared in order to support any Aboriginal Heritage Impact Permit (AHIP) application necessary. The ACHCRs and the Code of Practice are complementary and work with each other to allow a comprehensive assessment of Aboriginal cultural heritage within an area.

2.2 THE ACHCRs

The *Aboriginal cultural heritage consultation requirements for proponents* (ACHCRs) detail how consultation with the Aboriginal community is to be undertaken in order to assess the cultural significance of an area. There are four stages, as detailed below. Each stage has statutory timeframes associated to ensure sufficient time is allowed for registered Aboriginal parties (RAPs) to provide an appropriate response.

STAGE 1: NOTIFICATION OF PROJECT PROPOSAL AND REGISTRATION OF INTEREST

Stage 1 requires a list of Aboriginal people who may have cultural knowledge relevant to the area to be prepared from several sources of information. The first step requires enquiries to be made of certain statutory bodies regarding whether they are aware of Aboriginal people or organisations that may have an interest in the study area, and their contact details. Any Aboriginal people or organisations identified in this step must be contacted and invited to register an interest in the project. In addition, a notification must be placed in local print media requesting Aboriginal people or organisations to register their interest in the project. A list of those who register an interest must be compiled. A minimum of 14 days from the date of the letter or newspaper advertisement must be allowed for registrations of interest.

This stage has been completed for this project and a total of ten Aboriginal stakeholders have registered an interest in being consulted for the project.



STAGE 2: PRESENTATION OF INFORMATION ABOUT THE PROPOSED PROJECT

During Stage 2, information about the proposed project is provided to the RAPs, including location, scale, proposed development plans, timeframes, methodologies and any other relevant details relating to the project.

STAGE 3: GATHERING INFORMATION ABOUT CULTURAL SIGNIFICANCE OF THE PROJECT

During Stage 3, RAPs are invited to share information about the cultural significance of the study area, which can assist in the assessment of the cultural significance of the Aboriginal objects and/or places within the study area. The cultural heritage assessment informs and integrates with the scientific assessment of significance and therefore can assist in the development of mitigation and management measures for the project. Any feedback must be considered and implemented as appropriate into the methodology.

In this instance Apex Archaeology is providing this document in fulfilment of Stage 2 and 3 of the Consultation Guidelines.

STAGE 4: REVIEW OF DRAFT CULTURAL HERITAGE ASSESSMENT REPORT

Stage 4 sees the preparation of the draft ACHA Report, which details the results of the cultural heritage assessment. The draft is provided to the RAPs for their review and comment. A minimum of 28 days to comment on the ACHAR must be allowed. All comments must be addressed in the final document and the proponent's response to RAP comments must be included. Copies of any submissions received from RAPs must be included in the final ACHAR.

2.3 THE CODE OF PRACTICE

The Code of Practice provides a guideline for undertaking the archaeological and scientific assessment of Aboriginal archaeological sites within NSW. There are a number of requirements to be followed which will enable an assessment of the nature and extent of any archaeological deposits within the study area.

Previous archaeological work within an area can provide important information about the archaeological context of an area which can be used in the development of a predictive model for the specific study area, along with the ethnohistorical context of a study area. Sources of information include previous archaeological assessment reports and searches of AHIMS, and the results will be included in the AR prepared for the project.

An understanding of the landscape context in which a study area is located can assist in the assessment of the likelihood of archaeological material being preserved (if present), and if it is likely to be present, how well it may have been preserved. It can also assist in predicting how Aboriginal people may have used the area in the past and therefore how any archaeological material may have been distributed across the landscape. A number of factors must be included, such as past land use,



landforms present, geomorphic activity within the study area, any erosion, types of soils present and natural resources within the area.

Based on the information identified during the above process, a predictive model of Aboriginal land use of the area will be developed, which considers how archaeological evidence may have been distributed across the landscape. This predictive model will include an assessment of how and why Aboriginal people may have utilised the area in the past (for example, for subsistence activities, camping, ceremonial purposes, etc) and will consider both the spatial and temporal relationships of archaeological sites. Statements about the archaeological potential of specific areas within the study area will be made and presented in the AR.

2.4 RAP INPUT

If comments are received from RAPs stating that an alternative method would be preferred for any of the following sections, these will be considered and alternatives may be proposed. If this is the case, this document will be updated to reflect the amendments.

RAPs are under no obligation to share any cultural knowledge that they do not wish to share. It should be noted that our ultimate goal is to protect and avoid any known sites of archaeological and/or cultural significance, and if we do not know the location of these, we cannot ensure they are avoided.

This section will be updated upon receipt of comments from the RAPs.

3.0 DETAILED METHODOLOGY

Apex Archaeology has prepared detailed methodologies for assessment of cultural significance and field survey. At this stage, the priority is remediation and prevention of further impact to the site, including disturbance through further investigation. As such, test excavations for the site are considered unlikely.

3.1 CULTURAL SIGNIFICANCE

In order to gather information about the cultural significance of the study area, the following methodology will be followed for the project:

Aboriginal people who have registered an interest in being consulted for the project (registered Aboriginal parties – RAPs) may have an opportunity to visit the site and discuss the impacts that have already occurred within the site, and what is proposed as part of the development. During this visit, RAPs may have an opportunity to discuss any cultural knowledge that they may have regarding the site, should they wish to disclose such. RAPs would also have the opportunity to share knowledge either in writing or via telephone if they prefer. Additionally, requests for cultural knowledge may be made in writing.

Wherever possible, we prefer to communicate in writing, generally via email if possible. This is for a number of reasons, as follows:



- It ensures all information shared is recorded appropriately, which can be missed in phone conversations.
- It ensures all participants in consultation are able to provide a measured and considered response, rather than being 'put on the spot' by a phone call, and thus all participants can respond at their leisure within the consultation timeframes.
- It ensures consultation can be undertaken in an appropriately civil manner by all participants.

Any cultural knowledge provided by the RAPs will be treated in the manner determined by the RAPs. Any requests for knowledge to be kept confidential or restricted in terms of who may access the information would be respected. Electronic documents would be password protected where necessary to protect the integrity of the information. Information would only be included in reports where permission to include such is given.

Should you prefer to be consulted in a manner other than in writing (email or letter), please advise as a response to this document and advise your preferred manner of consultation.

3.2 FIELD SURVEY SAMPLING STRATEGY

The field survey will be completed in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, September 2010) (the Code of Practice); and the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (April 2011) and *Applying for an Aboriginal Heritage Impact Permit: Guide for Applicants* (May 2011). The field survey is not intended to be an opportunity for gathering information regarding the cultural significance of the area, but rather is a scientific inspection of the area to determine the current state and archaeological potential of the site. The survey will be undertaken in accordance with the following:

- The study area will be visually inspected by pedestrian survey;
- All photographs will be taken with an appropriate scale as per the Code of Practice requirements;
- The study area will be surveyed utilising pedestrian transects, with each participant responsible for inspecting a 2m wide transect on each pass;
- If stone artefacts are identified on the ground each item will have a flag placed at its location;
- The Archaeologist will record each item as per the lithic site recording form and lithic item recording form detailed below;
- The study area will be recorded utilising survey recording forms. The following is a list of attributes that will be recorded for each area surveyed:
 - Survey area;
 - Recorder name;
 - Date;
 - Landform element;
 - Slope;



- Distance to watercourse;
 - Vegetation;
 - Land surface;
 - Rock outcrops;
 - Detection limiting factors; and
 - Ground disturbance.
- The study area will be divided into survey units based on landform and given ratings in the following categories:
 - Survey area (as defined by the length of area surveyed multiplied by two. A participant in this instance can only see 1m either side at a time. Survey area covered increases when more participants are added);
 - Total area surveyed;
 - Percentage of sample inspected;
 - Archaeological visibility (this is a percentage of potential within the landform);
 - Surface visibility;
 - Exposure type; and
 - Effective survey coverage
 - Photos of each survey unit will be taken and identifying photograph file numbers recorded on the survey recording forms.
 - Aboriginal lithic site recording forms will be used to record artefact scatters and isolated finds. The following list of attributes will be recorded for each site:
 - Site Number;
 - Survey Area;
 - Date;
 - Recorder name;
 - Total number of artefacts recorded;
 - Visible extent of artefacts;
 - Extent of surface exposure;
 - GPS reading;
 - Sub-surface potential;
 - Research potential;
 - Raw stone material available;
 - Ground Disturbance;
 - Vegetation;
 - Photographs of site; and
 - Site plan.
 - Each artefact will be recorded using a lithic item recording form with the following attributes recorded:
 - Artefact number;
 - Locus;
 - Colour;
 - Stone material;
 - Lithic item type;
 - Length, Width & Thickness (mm);
 - Cortex Percentage;
 - Cortex type; and
 - Comments.



3.3 FURTHER ASSESSMENT

Under the Code of Practice, any archaeological deposits must have their nature and extent understood prior to making management decisions regarding the site, where the site is unable to be avoided. No archaeological investigation in the form of subsurface test excavation is currently proposed, given that the midden requires mitigation measures to preserve the deposit and prevent further erosion. However, if further investigation in the form of test excavation is required, test excavation would be undertaken following issue of an approved AHIP, given the site comprises shell midden which cannot be subject to test excavation under the Code of Practice. A detailed methodology for test excavation would be prepared as part of the AHIP application and provided for comment with the ACHAR.

4.0 INFORMATION SOUGHT

As required by Section 4.3 of the ACHCRs, Apex Archaeology sought the following information from all RAPs:

- feedback on the proposed methodology outlined above;
- any protocols that you would like adopted during this project to obtain and/or use cultural information;
- any Aboriginal objects of cultural significance and/or importance that you are aware of within the study area;
- any places of cultural significance and/or importance that you are aware of within the study area;
- your preference for the management of any archaeological material recovered during works (ie community repatriation, reburial on site, deposition with appropriate museum);
- guidance on the protocols, sensitivity, use and/or distribution of any cultural information that you provide Apex Archaeology; and
- whether you require any further information on the project.

Comments were accepted until CoB Monday 22 May 2023.



5.0 REFERENCES

DECCW 2010. *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*. DECCW, Sydney South.

DECCW 2010. *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*. DECCW, Sydney South.

DECCW 2010. *Aboriginal cultural heritage consultation requirements for proponents 2010*. DECCW, Sydney South.

OEH 2011. *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW*. OEH, Sydney South.

Orton, C, 2000. *Cambridge Manuals in Archaeology: Sampling in Archaeology*. Cambridge University Press, Cambridge.



APPENDIX A: RAP CORRESPONDENCE

From: rebecca@apexarchaeology.com.au
To: "[undisclosed recipients](#)"
Bcc: beqadel@yahoo.com; girragirramurun@yahoo.com; information@ntscorp.com.au; jlalc@bigpond.com; jlalc17@gmail.com; murrabidgeemullangari@yahoo.com.au; philipkhan.acn@live.com.au; RAW.CulturalHealing@hotmail.com; sonionerogers@yahoo.com; wenlissa01@hotmail.com; wingarrawilay@yahoo.com
Subject: RE: Wilsons Beach, Currarong - Method and Project Information
Date: Monday, 24 April 2023 4:42:04 PM
Attachments: [image001.png](#)
[22200 Wilsons Beach, Abrahams Draft Information & Methodology.pdf](#)

Good afternoon,

Thank you for your registration of interest in the above project. Please find attached further information about the project, as well as the proposed methodology for the assessment.

Please provide any comments you may have by CoB Monday 22 May 2022. Please get in touch if you'd like to discuss the project further.

Kind regards,



From: rebecca@apexarchaeology.com.au
To: "Wendy Morgan"
Subject: RE: Wilsons Beach, Currarong - Method and Project Information
Date: Monday, 15 May 2023 1:39:58 PM
Attachments: [image001.png](#)

Hi Wendy,

Thank you for your detailed comments on this.

I left a message on your voicemail regarding your concern about potential burials. It is definitely an aspect of the project that we are acutely aware of and have taken into consideration.

If you could please call me when you are free so we can have a chat to ensure your recommendations and concerns are properly taken into account but your privacy is respected.

Warm regards,

Rebecca (0405 236 821)

From: Wendy Morgan <wenlissa01@hotmail.com>
Sent: Monday, May 15, 2023 1:15 PM
To: rebecca@apexarchaeology.com.au
Subject: RE: Wilsons Beach, Currarong - Method and Project Information

Hi Rebecca,

My information is confidential I do not want it written into your report.

However from my observation there is no way you are going to save this midden, as you can see the earth is breaking way from the side of the hill along with the concrete footpath and railings.

I would like to see that there is proper care taken in removing the railing checking that is area was not used for a burial site.

Happy to chat over the telephone

Kind regards

Wendy Morgan
CEO GARI
0414 964 657

Sent from [Mail](#) for Windows

From: rebecca@apexarchaeology.com.au
Sent: Monday, 24 April 2023 4:43 PM
To: 'undisclosed recipients'
Subject: RE: Wilsons Beach, Currarong - Method and Project Information

Good afternoon,

Thank you for your registration of interest in the above project. Please find attached further information about the project, as well as the proposed methodology for the assessment.

Please provide any comments you may have by CoB Monday 22 May 2022. Please get in touch if you'd like to discuss the project further.

Kind regards,





APPENDIX F: DRAFT REPORT EMAILS AND RESPONSES

From: [Jenni Bate](#)
To: [Undisclosed Recipients](#)
Cc: rebecca@apexarchaeology.com.au
Bcc: john.dixon@girragirramurun@yahoo.com; wenlissa01@hotmail.com; [Phil Khan](#); [Darleen Johnson](#); raw.culturalhealing@hotmail.com; information@ntscorp.com.au; sonionerogers@yahoo.com; wingarrawilay@yahoo.com; [Alfred Wellington](#); [Admin JLALC](#)
Subject: Wilson"s Beach, Abrahams Bosom - Draft ACHA
Date: Thursday, 3 August 2023 6:07:45 PM
Attachments: [22200 Wilsons Beach, Abrahams Bosom Draft ACHA.pdf](#)
[22200 Wilsons Beach, Abrahams Bosom Draft AR.pdf](#)

Good afternoon,

I hope you're well. Thank you again for your registration of interest in the above project. Please find attached the draft ACHA and AR for your review and comment.

It is proposed to apply for an AHIP to permit remediation for the site. No further impact to the site is proposed and the remediation works would assist in protecting the remaining area from further impact.

I look forward to receiving your comments by CoB Thursday 31 August 2023. Comments received after this date may not be able to be included in the final report.

Kind regards,



Apex Archaeology is proud to support the [Immunisation Foundation of Australia](#) through our workplace giving program.

From: [Jenni Bate](#)
To: ["Undisclosed Recipients"](#)
Bcc: ["girragirramurun@yahoo.com"](mailto:girragirramurun@yahoo.com)
Subject: Wilson's Beach, Abrahams Bosom - Draft ACHA
Date: Thursday, 3 August 2023 6:14:00 PM
Attachments: [22200 Wilsons Beach, Abrahams Bosom Draft ACHA.pdf](#)
[22200 Wilsons Beach, Abrahams Bosom Draft AR.pdf](#)

Good afternoon,

I hope you're well. Thank you again for your registration of interest in the above project. Please find attached the draft ACHA and AR for your review and comment.

It is proposed to apply for an AHIP to permit remediation for the site. No further impact to the site is proposed and the remediation works would assist in protecting the remaining area from further impact.

I look forward to receiving your comments by CoB Thursday 31 August 2023. Comments received after this date may not be able to be included in the final report.

Kind regards,



Apex Archaeology is proud to support the [Immunisation Foundation of Australia](#) through our workplace giving program.



APPENDIX G: ARCHAEOLOGICAL REPORT

Appendix 2. Archaeological report

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WILSONS BEACH, CURRARONG, NSW

ARCHAEOLOGICAL REPORT

Report to Crown Lands,
Department of Planning and Environment

LGA: Shoalhaven

September 2023





EXECUTIVE SUMMARY

Apex Archaeology have been engaged by Crown Lands, Department of Planning and Environment to assist in preparing an Aboriginal Cultural Heritage Assessment (ACHA) for proposed mitigation works at Wilsons Beach, within Abrahams Bosom Reserve, Currarong. The project is located within part of Lot 7004 DP1030104 and is within the Shoalhaven Local Government Area (LGA).

This report details the results of the archaeological assessment of the site, prepared in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (September 2010) (the Code of Practice). This Archaeological Report (AR) forms an appendix to the ACHA report prepared for the project.

The study area comprises an approximate 5 x 20m corridor along Abrahams Bosom Walking Track, extending onto Wilsons Beach. The site is located within a registered shell midden deposit.

The shell midden is registered on the Aboriginal Heritage Management Services (AHIMS) as AHIMS #58-2-0054 (Crookhaven Bight; Honeysuckle Point) and is located at the end of a walking track that accesses Wilsons Beach. It has been partially washed out following significant rainfall events, and requires mitigation measures to prevent further impact. An Aboriginal Heritage Impact Permit (AHIP) is required to allow these remediation works to be undertaken. As such, an ACHA is necessary to inform the AHIP application.

A site inspection of the area was undertaken by Leigh and Jenni Bate on the 9th June 2023. Jerrinja LALC were invited to participate in the survey but were unable to attend on the day. Assessment of the shell deposit identified that it comprised a sparse and fragmentary deposit. Some larger fragments were able to be identified as *Anadara spp* but in general, the shells were too fragmentary for definitive identification. The shell deposit and bleached fragments were intermixed with grey and yellow sand, and recent small shell washed in by the tides. Generally, the shell present could be defined as shell grit. There was no evidence of any Aboriginal stone artefacts, animal bones, charcoal fragments, or other features suggesting it was associated with Aboriginal activity within the area.

However, it is not possible to definitively state that the shell deposit is or is not Aboriginal in origin. Given the site is registered on AHIMS as an Aboriginal shell midden, and in an abundance of caution, the exposed area of shell must be managed appropriately. As such, the following recommendations have been made for the project:

RECOMMENDATION 1: APPLICATION FOR AHIP REQUIRED

An application should be made to Heritage NSW for an AHIP to permit rectification works to occur in the vicinity of the exposed shell deposit, AHIMS site #58-2-0054. This area should be covered with geofabric or similar textile, and covered with fill (clean sand or similar) to ensure no further impact occurs to this location. Sandbags



should be placed on top of geofabric in areas requiring significant remediation to ensure stabilisation of the area. Minor drainage works are also necessary to direct water flow away from the access track and prevent further washout occurring. The AHIP boundary should encompass the area delineated on Figure 8 of this report.

RECOMMENDATION 2: MAINTAIN ABORIGINAL COMMUNITY CONSULTATION

Consultation with the RAPs regarding the project should continue, in order to keep the RAPs informed about the management of Aboriginal cultural heritage within the study area. This includes notifying the RAPs when an AHIP application is lodged, and also in the event an AHIP is issued.

Consultation undertaken for this project must be maintained at least every six months in order to maintain validity. It is the Proponent's responsibility to ensure consultation remains valid. In the event a gap of more than six months occurs between consultation events, it may be necessary to restart the consultation process to support any AHIP applications that are necessary.

RECOMMENDATION 3: WORKS BOUNDARIES

The proposed remediation works must be contained within the assessed boundary for this project. If there is any alteration to the boundaries of the proposed remediation works to include additional areas not assessed as part of this archaeological investigation, further investigation of those areas should be completed to assist in managing Aboriginal objects and places which may be present in an appropriate manner.

RECOMMENDATION 4: STOP WORK PROVISION

Should unanticipated Aboriginal archaeological material be encountered during site works, all work must cease in the vicinity of the find and an archaeologist contacted to make an assessment of the find and to advise on the course of action to be taken. Further archaeological assessment and Aboriginal community consultation may be required prior to the recommencement of works. Any objects confirmed to be Aboriginal in origin must be reported to Heritage NSW.

Human remains of Aboriginal people have previously been recorded in shell middens within rockshelters within Beecroft Peninsula, and within sand dune deposits in Jervis Bay. In the unlikely event that suspected human remains are identified during rectification works, all activity in the vicinity of the find must cease immediately and the find protected from harm or damage. The NSW Police and the Coroner's Office must be notified immediately. If the finds are confirmed to be human and of Aboriginal origin, further assessment by an archaeologist experienced in the assessment of human remains and consultation with both Heritage NSW and the RAPs for the project would be necessary.



RECOMMENDATION 5: REPORTING

One digital copy of this report should be forwarded to Heritage NSW to support the required AHIP application for the project, along with required supporting documentation.

One digital copy of this report should be forwarded to Heritage NSW for inclusion on the Aboriginal Heritage Information Management System (AHIMS).

One copy of this report should be forwarded to each of the registered Aboriginal stakeholders for the project.



Apex Archaeology acknowledges and pays respect to the past, present and future Traditional Custodians and Elders of this nation and in whose land this assessment took place, and to the continuation of cultural, spiritual and educational practices of Aboriginal and Torres Strait Islander peoples.

DOCUMENT CONTROL

The following register documents the development and issue of the document entitled 'Wilsons Beach, Currarong, NSW: Aboriginal Cultural Heritage Assessment Report', prepared by Apex Archaeology in accordance with its quality management system.

Revision	Prepared by	Reviewed by	Comment	Issue Date
1 – Draft	Rebecca Bryant & Jenni Bate	Leigh Bate	Client Review	7 July 2023
2 – Draft	Jenni Bate	Crown Lands	RAP review	3 August 2023
3 – Final	Jenni Bate	RAPs	Issue of final	6 Sept 2023



GLOSSARY OF TERMS

Aboriginal Object	An object relating to the Aboriginal habitation of NSW (as defined in the NPW Act), which may comprise a deposit, object or material evidence, including Aboriginal human remains.
ACHA	Aboriginal Cultural Heritage Assessment
ACHAR	Aboriginal Cultural Heritage Assessment Report
ACHCRs	<i>Aboriginal cultural heritage consultation requirements for proponents 2010</i>
AHIMS	Aboriginal Heritage Information Management System maintained by Heritage NSW, detailing known and registered Aboriginal archaeological sites within NSW
AHIP	Aboriginal Heritage Impact Permit
AR	Archaeological report
ASIRF	Aboriginal Site Impact Recording Form
BP	Before Present, defined as before 1 January 1950.
Code of Practice	The DECCW September 2010 <i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i>
Consultation	Aboriginal community consultation in accordance with the DECCW April 2010 <i>Aboriginal cultural heritage consultation requirements for proponents 2010</i> .
DA	Development Application
DECCW	The Department of Environment, Climate Change and Water (now Heritage NSW)
Disturbed Land	If land has been subject to previous human activity which has changed the land's surface and are clear and observable, then that land is considered to be disturbed
Due Diligence	Taking reasonable and practical steps to determine the potential for an activity to harm Aboriginal objects under the <i>National Parks and Wildlife Act 1974</i> and whether an application for an AHIP is required prior to commencement of any site works, and determining the steps to be taken to avoid harm
Due Diligence Code of Practice	The DECCW Sept 2010 <i>Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales</i>
GIS	Geographical Information Systems
GSV	Ground Surface Visibility
Harm	To destroy, deface or damage an Aboriginal object; to move an object from land on which it is situated, or to cause or permit an object to be harmed
Heritage NSW	Heritage NSW within the Department of Premier and Cabinet; responsible for overseeing heritage matters within NSW
ka	Kiloannus, a unit of time equating to 1,000 years
LALC	Local Aboriginal Land Council
LGA	Local Government Area
NPW Act	<i>NSW National Parks and Wildlife Act 1974</i>
NPWS	National Parks and Wildlife Service
OEH	The Office of Environment and Heritage of the NSW Department of Premier and Cabinet (now Heritage NSW)
PAD	Potential Archaeological Deposit
RAPs	Registered Aboriginal Parties
SCC	Shoalhaven City Council



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1.0 INTRODUCTION

Apex Archaeology have been engaged by Crown Lands, Department of Planning and Environment to assist in preparing an Aboriginal Cultural Heritage Assessment (ACHA) for proposed mitigation works to prevent further washout of a shell midden at Wilsons Beach, within Abrahams Bosom Reserve, Currarong. The shell midden is registered on the Aboriginal Heritage Management Services (AHIMS) as AHIMS # 58-2-0054 (Crookhaven Bight; Honeysuckle Point) and is located at the base of a metal stair case that accesses Wilsons Beach. The project is located within part of Lot 7004 DP1030104 and is within the Shoalhaven Local Government Area (LGA).

This report details the results of the archaeological assessment of the site, prepared in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (September 2010) (the Code of Practice). This report forms an appendix to the ACHA report prepared for the project. It has been prepared to inform the Development Application (DA) for the project.

An Aboriginal Heritage Impact Permit (AHIP) is required to allow these remediation works to be undertaken. As such, an ACHA is necessary to inform the AHIP application.

1.1 PROJECT PROPONENT

The proponent for the project is Crowns Lands, Department of Planning and Environment. The client contact for the project was Bryan Pollock, Project Officer – Crown Land Built Assets.

1.2 OBJECTIVES OF THE ARCHAEOLOGICAL ASSESSMENT

The archaeological investigation was undertaken to meet the requirements of the Code of Practice.

The purpose of the archaeological investigation is to understand and establish the potential harm the proposed development may have on Aboriginal cultural heritage within the study area, both tangible and intangible.

Any development works which disturb the ground surface have the potential to impact Aboriginal archaeological deposits and therefore an assessment of whether the study area contains such deposits is required prior to the commencement of construction works. An assessment of whether the proposed development would impact these deposits (if present) is also necessary, and identification of to what extent the deposits would be impacted is also required. The degree of impact which may be allowable is determined, in part, with consideration of the level of cultural significance attributed to the cultural values of the study area, both tangible and intangible.



As such, the objectives of the assessment are to determine whether Aboriginal cultural values exist within the study area, and whether the proposed project can avoid impact to these values, or if mitigation measures may be necessary.

1.3 STUDY AREA AND PROJECT BRIEF

The study area is located at Wilsons Beach that is within part of Lot 7004 DP1030104 within Abrahams Bosom Reserve in Currarong, NSW. Currarong is located on the northern side of the Beecroft Peninsula that also forms the northern headland of Jervis Bay (Figure 1 and Figure 2). The study area is located approximately 25 km southeast of Nowra. It comprises an area of approximately 20m x 5m and is bound by the beach foreshore bordering the Crookhaven Bite to the west, and sand dunes to the north, south and west.

The area of exposed shell deposit requires rehabilitation in order to prevent further erosion. This will also assist in protecting any potential cultural shell midden behind the exposed area. As such, the only work that is proposed to be undertaken is to aid in the rehabilitation and remediation of the area containing the exposed shell. It is proposed to cover this with geofabric or similar textile, along with introduced fill, and to plant out the area with *Lomandra longifolia* to protect the shell deposit from any further impact.

The subject land is within Crown Lands, which is managed by the Department of Planning and Environment.

1.4 INVESTIGATORS AND CONTRIBUTORS

This archaeological assessment was commissioned by Crown Lands, Department of Planning and Environment. Apex Archaeology thanks Bryan Pollock from Crown Lands for his assistance with the project. Thanks are also extended to the registered Aboriginal groups for their participation and assistance with the project.

This report has been prepared by Jenni Bate, Director and Archaeologist with Apex Archaeology and Rebecca Bryant, Archaeologist with Apex Archaeology. The report was reviewed by Leigh Bate, Director and Archaeologist with Apex Archaeology. Both Jenni and Leigh have over sixteen years of archaeological consulting experience within NSW, and Rebecca has 11 years' experience in archaeological research projects (inc five years in consultancy). Project team roles and qualifications are shown in Table 1.

Table 1: Project team roles and qualifications

Name	Role	Qualifications
Rebecca Bryant	Report Author	B.Science (Arch/Paleo); Mphil (TBC 2022)
Jenni Bate	Project Manager; Report Author; Field Inspection; Review	B.Archaeology; Grad. Dip. CHM
Leigh Bate	Field inspection, Report Author; Review; GIS	B.Archaeology; Grad. Dip. Arch; Dip. GIS



1.5 LIMITATIONS

This report relies in part on previously recorded archaeological and environmental information for the wider region. This includes information from AHIMS, which is acknowledged to be occasionally inaccurate, due to inaccuracies in recording methods. No independent verification of the results of external reports has been made as part of this report.

It should be noted that AHIMS results are a record only of the sites that have been previously registered with AHIMS and are not a definitive list of all Aboriginal sites within an area, as there is potential for sites to exist within areas that have not previously been subject to archaeological assessment.

Field investigations for this report included survey and test excavation. The results are considered to be indicative of the nature and extent of Aboriginal archaeological remains within the study area, but it should be noted that further Aboriginal objects and sites which have not been identified as part of this assessment may be present within the wider area.



<p>PO Box 236 NOWRA NEW SOUTH WALES 2541</p>	<p>0 21 42</p> <p>kilometres</p>	<p>Projection: MGA Zone 56 (GDA 94) Base Map: Six Maps Topo Final - Version 1</p>	<p>Figure 1: Study area within its regional context.</p>	<p>N</p>
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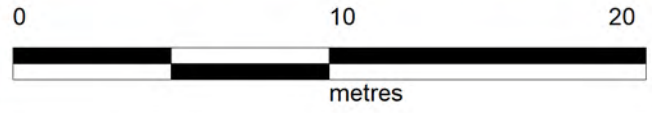


Study Area



Lot Boundaries

Wilson's Beach



Projection:
MGA Zone 56 (GDA 94)
Base Map:
Near Maps 2023
Image Date:
27/05/2023
Final - Version 1

Figure 2: Study area within its local context.





2.0 STATUTORY CONTEXT

Heritage in Australia, including both Aboriginal and non-Aboriginal heritage, is protected and managed under several different Acts. The following section presents a summary of the applicable Acts which provide protection to cultural heritage within NSW.

2.1 COMMONWEALTH LEGISLATION

2.1.1 ABORIGINAL AND TORRES STRAIT ISLANDER HERITAGE PROTECTION ACT 1984

This Act provides for the preservation and protection of injury and/or desecration of areas and objects in Australia and its waters that are of significance to Aboriginal people, in accordance with Aboriginal tradition.

Under this Act, the responsible Minister has provision to make both temporary and/or long-term declarations, in order to provide protection to areas and objects which are at threat of injury or desecration. In some instances, this Act can override State or Territory provisions, or be invoked if State or Territory provisions are not enforced. An Aboriginal or Torres Strait Islander individual or organisation must invoke the Act.

No items within the study area are listed or protected under this Act.

2.1.2 ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

The EPBC Act provides protection to environmental sites of national significance, including places with cultural heritage values that contribute to Australia's national identity. The Act aims to respect the role of Indigenous peoples in the conservation and ecologically sustainable use of Australia's biodiversity, and to enhance the protection and management of important natural and cultural places. Additionally, the Act is designed to promote the use of Indigenous peoples' knowledge of biodiversity with the involvement of, and in cooperation with, the owners of the knowledge.

The National Heritage List provides a listing of natural, historic and Indigenous places of outstanding significance to the nation, while the Commonwealth Heritage List details the Indigenous, historic and natural places owned or controlled by the Australian Government.

Under the EPBC Act, approvals are required if any action is proposed that will have (or is likely to have) a significant impact on the National Heritage values of a National Heritage place. Therefore, actions must be referred to the Australian Government Minister for the Environment and Heritage. A decision will be made as to whether the proposed action will have a significant impact on any matters of national significance.

The Beecroft Peninsula is listed on the Commonwealth Heritage List for its 'natural' significance. It was registered on the 21/10/1980 (ID 102514). The statement of



significance notes that is the best example of a Permian cliffed coast in New South Wales. It is also recognised for its high diversity of vegetation types within a small area including mangroves, saltmarsh, freshwater swamps, heathland, eucalypt forest and subtropical and littoral rainforest. The statement of significance also acknowledges the importance of the peninsula to the Aboriginal people as following:

The area of Commonwealth land on the Beecroft Peninsula at Jervis Bay is of particular significance to the Jerinja and Wreck Bay Aboriginal communities as part of their traditions. Their stories describe the movement of ancestral beings, including Bundoola, Spandula, the Bip Bip women and others, as they formed the landscape, people and the law. The Beecroft Hill area, the Devils Hole area, The Drum and Drumsticks area and the Duck Hole area form part of these stories while the southern part of Jervis Bay has strong cultural associations for women. The stories of the activities of ancestral beings create links with neighbouring regions and Aboriginal people with traditional links to the area say that Jervis Bay is the birthplace of the thirteen tribes of the south coast.

There are a large numbers of middens mainly located near the beaches on the southern and western sides of the Peninsular that contain evidence of past patterns of Aboriginal exploitation of marine resources. They form part of the continuing tradition of marine resource use among the Wreck Bay and Jerinja Aboriginal communities. Other sites providing evidence of past Aboriginal activity in the area include rockshelters with occupation debris, artefact scatters, grinding grooves ceremonial grounds and rock shelters with paintings and stencils on the walls. Some of the stylistic elements in the paintings are unique and a number of the motifs can be interpreted by members of the Jerinja Aboriginal community in the context of their traditional stories.

2.1.3 NATIVE TITLE ACT 1993

The *Native Title Act 1993*, as amended, provides protection and recognition for Native title. Native title is recognised where the rights and interests of over land or waters where Aboriginal and Torres Strait Islander practiced traditional laws and customs prior to the arrival of European settlers, and where these traditional laws and customs have continued to be practiced.

The National Native Title Tribunal (NNTT) was established to mediate native title claims made under this Act. Three registers are maintained by the NNTT, as follows:

- National Native Title Register
- Register of Native Title Claims
- Register of Indigenous Land Use Agreements.

Searching the NNTT registers allows identification of potential Aboriginal stakeholders who may wish to participate in consultation.

A search of all three registers identified a registered Native Title claim by the South Coast People over the study area (Figure 3); however, this claim has not yet been determined. No determined Native Title claims exist over the study area.

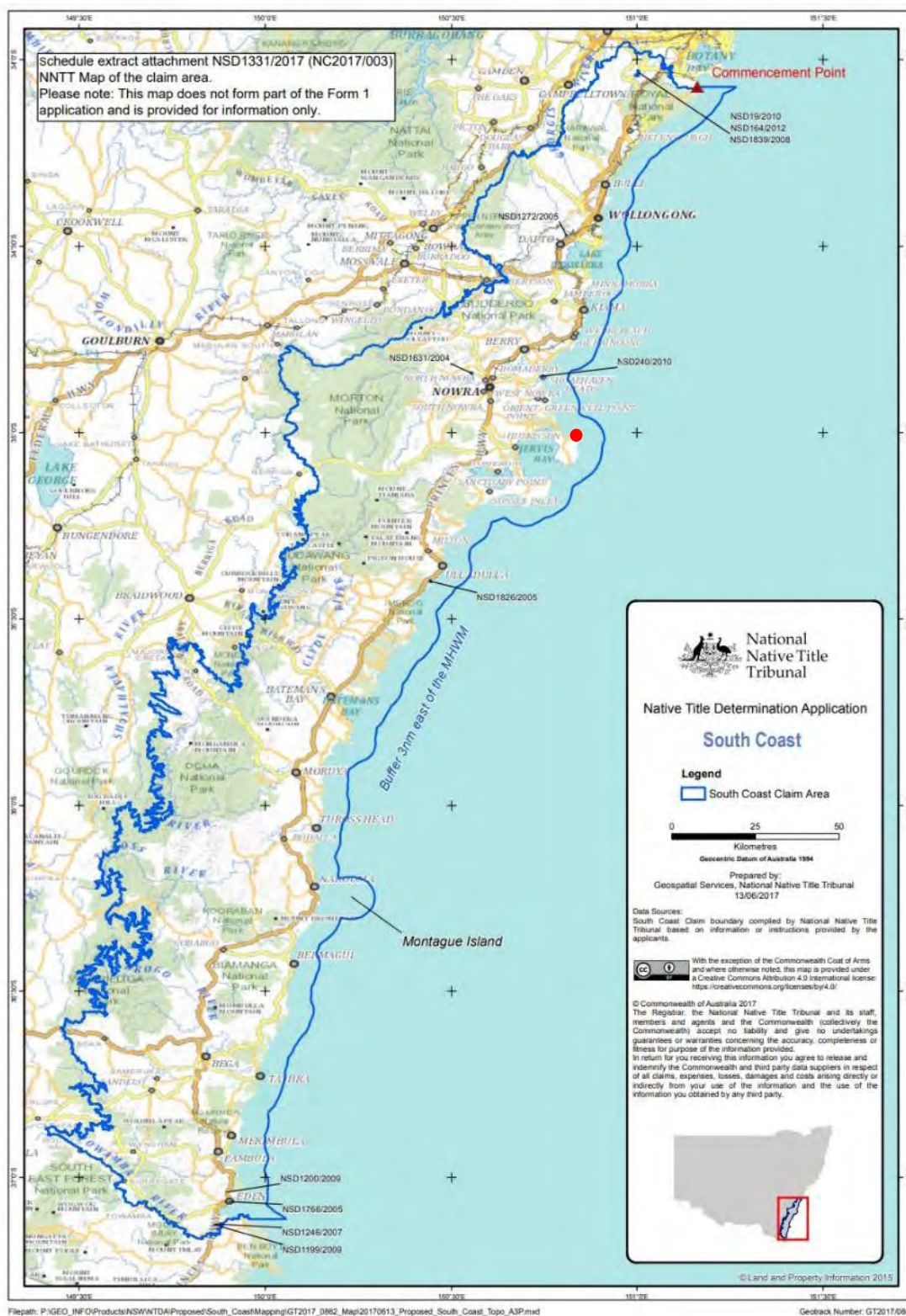


Figure 3: Study area (red dot) within the South Coast People, Tribunal No NC2017/003 Native Title Claim boundary.



2.2 NEW SOUTH WALES LEGISLATION

2.2.1 NATIONAL PARKS AND WILDLIFE ACT 1974

The *National Parks and Wildlife Act 1974* provides protection for all Aboriginal objects and places within NSW. Aboriginal objects are defined as the material evidence of the Aboriginal occupation of NSW, while Aboriginal Places are defined as areas of cultural significance to the Aboriginal community. All Aboriginal objects are protected equally under the Act, regardless of their level of significance. Aboriginal Places are gazetted if the Minister is satisfied that the location was and/or is of special significance to Aboriginal people.

Following amendments to the NPW Act in 2010, approval to impact Aboriginal cultural heritage sites is only granted under a Section 90 AHIP, which is granted by Heritage NSW in the Department of Premier and Cabinet.

2.2.2 NSW NATIONAL PARKS AND WILDLIFE REGULATION 2019

Part 5, Division 2 of the *National Parks and Wildlife Regulation 2019* addresses Aboriginal objects and places in relation to the NPW Act 1974, and outlines how compliance with relevant codes of practice can be met.

Clause 58(1) outlines the defence of low impact acts or omissions to the offence of harming Aboriginal objects, which includes maintenance works on existing roads and fire trails, farming and land management work, grazing of animals, activities on land that has been disturbed that is exempt or complying development, mining exploration work, removal of vegetation (aside from Aboriginal culturally modified trees), seismic surveying or groundwater monitoring bores on disturbed ground, or environmental rehabilitation work (aside from erosion control or soil conservation works such as contour banks).

Clause 58(4) outlines the definition of 'disturbed land', as land that "has been the subject of a human activity that has changed the land's surface, being changes that remain clear and observable".

Clause 59 relates to the notification of Aboriginal objects and sites and Clause 60 relates to the requirements for the consultation process to support an AHIP application. The regulation sets out the requirements broadly in line with those outlined in the ACHCRs.

2.2.3 ENVIRONMENTAL PLANNING & ASSESSMENT ACT 1979

Under the EP&A Act, it is necessary to consider environmental impacts, including impact to cultural heritage, as part of the land use process. Local Environmental Plans (LEPs) and Development Control Plans (DCPs) are also required to be prepared by Local Government Areas (LGAs) in order to provide guidance on the applicable level of environmental assessment. LGAs are required to maintain a list of locally significant heritage items as part of their LEP.



Under the EP&A Act, Part 3 describes the planning instruments at both local and regional levels; Part 4 relates to development assessment and consent processes, and Part 5 refers to infrastructure and environmental impact assessment.

The determining authority in this instance is Crown Lands, who will determine a Review of Environmental Factors (REF) for the project under Part 5 of the EP&A Act.

2.2.4 SHOALHAVEN CITY COUNCIL LEP 2014

The *Shoalhaven City Council Local Environmental Plan (LEP) 2014* is the overarching planning instrument applicable to the Shoalhaven LGA. However, in this instance, Crown Lands are the consent authority for the project. It is noted that the LEP contains the following clauses relevant to works near Aboriginal sites.

Clause 5.10(2) (e) identifies that no buildings may be erected on land within a heritage conservation area, or which contains an Aboriginal object, without first obtaining development consent. Further, Clause 5.10(2) (c) states that archaeological sites may not be disturbed or excavated without development consent. Exceptions to the requirement for development consent are detailed by -

Clause 5.10(3) (a) and include work that is minor in nature or is for the maintenance of a heritage item, Aboriginal object, Aboriginal place, archaeological site or heritage conservation area, and would not adversely affect the heritage significance of the heritage item, Aboriginal object, Aboriginal place, archaeological site or heritage conservation area, or (b) the development is in a cemetery or burial ground and the proposed development would not cause disturbance to human remains, relics, Aboriginal objects in the form of grave goods, or to an Aboriginal place of heritage significance.

Clause 5.10(8) (a & b) requires that the effect of any development on an Aboriginal place of heritage significance must be considered, and the Aboriginal community must be notified of any proposed developments and take into consideration any responses received with 28 days after the notice was sent. This document details the notification to the registered Aboriginal community regarding the intention to develop the study area and the consultation undertaken regarding the proposed development's potential impact on Aboriginal cultural heritage in the area.

The whole of Abrahams Bosom Reserve is shaded in brown, which falls into the "General Conservation" area. No archaeological sites, which would be identified in yellow are mapped on the SLEP 2014 heritage map (Figure 4) or within or in the vicinity of the study area.

Although there are no Aboriginal heritage items listed this does not mean that the land has low Aboriginal cultural heritage significance. A large number of sites have been recorded on the peninsula.

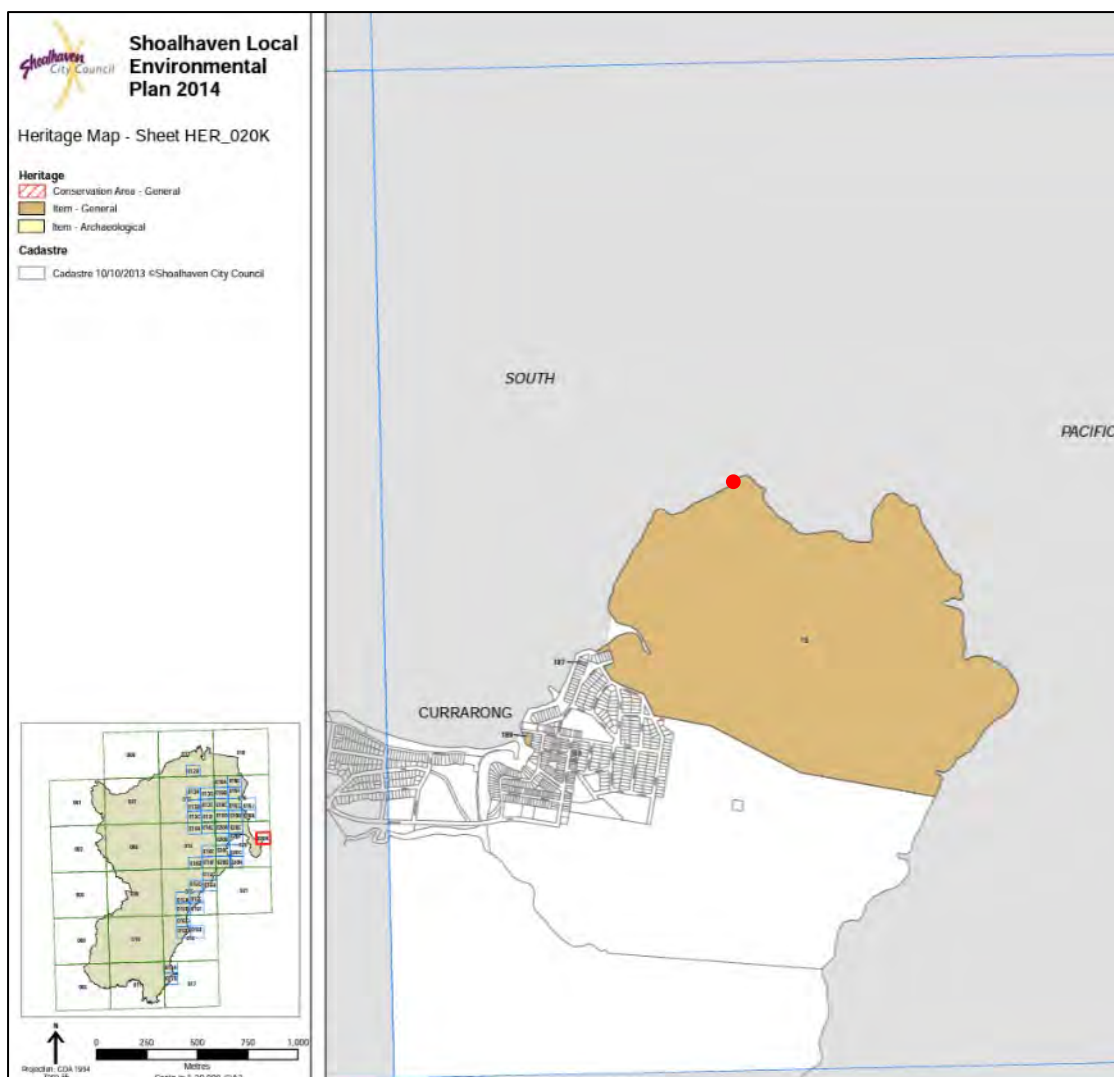


Figure 4. Detail of the SCC Heritage Map. Approx. study area indicated by red dot (Source: SCC LEP 2014 Heritage Map Sheet HER_020K)



3.0 ABORIGINAL CULTURAL HERITAGE

This section presents information about both the physical and cultural landscape in which the study area is located, as well as previous archaeological and ethnohistorical studies, to provide context and background to the existing knowledge of Aboriginal culture in the area.

3.1 EXISTING ENVIRONMENT

The study area is located within the geological structure known as the Sydney Basin, which is roughly bounded by the Great Dividing Range to the west, the coast to the east, Newcastle to the north and Durras, near Batemans Bay, to the south. More specifically, the study area is located at Wilsons Beach within Abrahams Bosom Reserve which is located on the northern side of the Beecroft Peninsula that also forms the northern headland of Jervis Bay. It was formerly an island but has been linked to the mainland by a narrow strip of sand dunes formed during the last ice age (Mills 2022).

The shell midden has been impacted by the construction of the stairs, wind erosion, and water runoff from Abrahams Reserve.

3.1.1 SOILS, GEOLOGY AND TOPOGRAPHY

The underlying geology of the majority of the Beecroft Peninsula including the study area is the Snapper Point Formation, locally known as 'Jervis Bay Sandstone' It comprises quartz, sandstone and minor conglomerate.

It was not possible to include the name of the soil landscape that overlies the geology on the Beecroft Peninsula as there appears to be a general gap in the soil landscape maps available for this area. There are no maps on the New South Wales Government's 'Soil and Land information Dataset' (SEED). Nevertheless, despite being unable to identify the official name of the soil landscape, aerial footage shows that the study area leads onto a sandy beach which is fringed by a low-profile dune scape. The origins of the sand deposit are most likely a combination of marine and aeolian sand deposit, given the large amount of shell and shell fragments clearly visible in general map images of Wilsons Beach.

3.1.2 FLORA AND FAUNA

The plants found within the Beecroft Peninsula are typical of the sandstone soils of the Sydney Basin. Heathland plant species would have been, and still are, prominent. The coastal sand dunes support *Banksia* species such as *Banksia integrifolia*, *Eucalyptus botryoides* and a number of *Casuarina* including Swamp oak and she-oak. Several rainforest plants can also be found.

There would have been a large variety of animals including brushtail and ringtail possums, eastern grey kangaroos, swamp wallabies, bats, parrots, as well as reptiles, amphibians and fish, crustaceans and shellfish on the rock platforms that border the beach.

Many of these plants and trees would have provided resources for Aboriginal people; to fulfill dietary needs, provide raw material for tools and implements, and used for medicinal purposes. For example: the various *Eucalypts* would have provided wood for shields, canoes and coolamons; gum from the wattle trees would have been collected and mixed with ash to make a strong resin to attach stone tools to wooden handles for spears and axes; fur from possums would have been sewn together using a needle made from animal bones and thread made from the sinew of animal's muscles.

3.1.3 HYDROLOGY

There are no creek or drainage lines mapped within the study area itself. However, there is a creek with several tributaries and a drainage line within Abrahams Bosom Reserve. The closest creek to the study area is Abrahams Bosom Creek, which is 900m to the south of the study area. It is considered a second order creek and may not have provided a reliable fresh-water source. Currarong Creek, approximately 2 km to the southwest, is a third-order creek and would probably have been a more reliable source of fresh water.

Watercourse classification ranges from first order through to fourth order (and above), with first order being the lowest, ie a minor creek or ephemeral watercourse, and fourth or above being a large watercourse such as a river, as defined by the Department of Planning and Environment (DPE; Figure 5). This classification is recognised as a factor which helps the development of predictive modelling in Aboriginal archaeology in NSW.

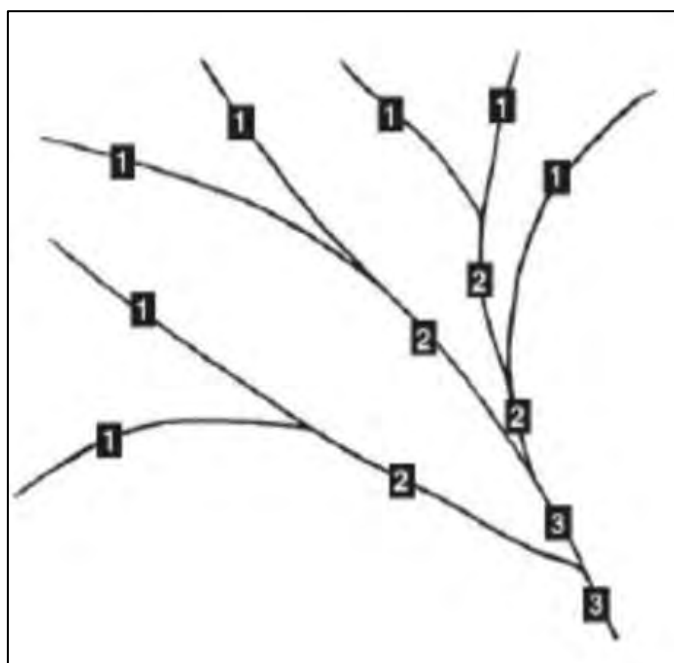


Figure 5: The Strahler system (Source: Department of Planning and Environment 2016).



3.1.4 RAW MATERIALS

A wide range of raw materials were selected by Aboriginal people for flaking to create stone implements. Material types ranged from high quality to poor quality for flaking purposes, depending on the geology of the area and readily available material types. The following is a description of a range of raw material types known to have been utilised by Aboriginal people for the creation of stone artefacts. Not all occur naturally within all environments, although different resources can be identified within different regions due to trade or resource carrying (ie 'manuport' stone).

BRECCIA

Breccias are coarse, angular volcanic fragments cemented together by a finer grained tuffaceous matrix.

CHALCEDONY

Chalcedony is a microcrystalline, siliceous rock which is very smooth and can be glossy. Introduction of impurities can produce different coloured versions of chalcedony, including yellow/brown (referred to as carnelian), brown (sard), jasper (red/burgundy) and multicoloured agate. It flakes with a sharp edge and was a prized material type for the creation of stone artefacts in parts of Australia (Kuskie & Kamminga 2000: 186).

CHERT

Chert is a highly siliceous sedimentary rock, formed in marine sediments and also found within nodules of limestone. Accumulation of substances such as iron oxide during the formation process often results in banded materials with strong colours. Chert is found in the Illawarra Coal Measures and also as pebbles and colluvial gravels. It flakes with durable, sharp edges and can range in colour from cream to red to brown and grey.

PETRIFIED WOOD

Petrified wood is formed following burial of dead wood by sediment and the original wood being replaced by silica. Petrified wood is a type of chert and is a brown and grey banded rock and fractures irregularly along the original grain.

QUARTZ

Pure quartz is formed of silicon dioxide, and has a glossy texture and is translucent. Introduction of traces of minerals can lead to colouration of the quartz, such as pink, grey or yellow. The crystalline nature of quartz allows for minute vacuoles to fill with gas or liquid, giving the material a milky appearance.

Often quartz exhibits internal flaws which can affect the flaking quality of the material, meaning that in general it is a low-quality flaking material (Kuskie & Kamminga 2000: 186). However, quartz is an abundant and widely available material type and therefore is one of the most common raw materials used for artefact manufacture in Australia. Flaking of quartz can produce small, very sharp flakes which can be used for activities such as cutting plant materials, butchering and skinning.



QUARTZITE

Formed from sandstone, quartzite is a metamorphic stone high in silica that has been heated or had silica infiltrate the voids found between the sand grains. Quartzite ranges in colour from grey to yellow and brown.

SILCRETE

Silcrete is a siliceous material formed by the cementing of quartz clasts with a matrix. These clasts may be very fine grained to quite large. It ranges in colour from grey to white, brown, red or yellow. Silcrete flakes with sharp edges and is quite durable, making silcrete suitable for use in heavy duty woodworking activities and also for spear barbs (Kuskie & Kamminga 2000:184).

TUFF/INDURATED MUDSTONE

There is some disagreement relating to the identification of lithic materials as tuff or indurated mudstone. The material is a finely textured, very hard yellow/orange/reddish-brown or grey rock. Kuskie and Kamminga (2000: 6, 180) describe that identification of lithic materials followed the classification developed by Hughes (1984), with indurated mudstone described as a common stone material in the area. However, Kuskie and Kamminga's analysis, which included x-ray diffraction, identified that lithics identified as 'indurated mudstone' was actually rhyolitic tuff, with significant differences in mineral composition and fracture mechanics between the stone types. They define mudstone as rocks formed from more than 50% clay and silt with very fine grain sizes and then hardened.

The lithification of these mudstones results in shale (Kuskie & Kamminga 2000: 181) and thus 'indurated mudstone', in the opinion of Kuskie and Kamminga, do not produce stones with the properties required for lithic manufacture.

In 2011, Hughes, Hiscock and Watchman undertook an assessment of the different types of stones to determine whether tuff or indurated mudstone is the most appropriate terminology for describing this lithic material. The authors undertook thin section studies of a number of rocks and determined that the term 'indurated mudstone' is appropriate, with an acknowledgment that some of this material may have been volcanic in origin. They also acknowledge that precise interpretation of the differences between material types is difficult without detailed petrological examination, and suggest that artefacts produced on this material are labelled as 'IMT' or 'indurated mudstone/tuff'.

VOLCANIC

Both volcanic and acid volcanic stones are raw material type within the South Coast. Without detailed petrological analysis it can be sometimes difficult to identify the specific raw material. However, probably one of the most common and recognisable types of volcanic stone is basalt, which is commonly referred to as 'blue metal'. It is solidified lava that was produced by now extinct volcanoes and diatremes that are spread-out within the Sydney Basin. If the lava cools quickly it results in fine-grained



basalt that is easily flaked or ground to make tools, implements or weapons. Tuff forms from the tiny ash particles that are also released during volcanic explosions. When it cools it hardens into a fine-grained rock called 'tuff', as discussed above.

Basalt would have been either collected from the primary deposits formed during the eruption, which would require pieces to be broken off (quarried) or it was collected in cobble-form from a creek bed or shoreline. Cobbles are referred to as secondary sources as they are formed from pieces of rock that have been dislodged from their primary source and end up in creeks and/or river systems (Petrequin 2016; Attenbrow *et al.* 2017). The flow of water moves them around and smooths them into water-rolled cobbles that can be transported considerable distance from the original source. Basalt was often used to make axes which were either flaked into the desired shape from quarried stone, or from cobbles which quite often only required only one end to be ground into a sharp working edge.

Basalt cobbles can be found along the banks of rivers, and in bedrock quarries within the South Coast region. Recent research undertaken by the Australian Museum and University of New England using portable XRF technology demonstrated that a number of stone axes held at the Australian Museum have been traced to these sources (Attenbrow *et al.* 2017).

3.1.5 PROCUREMENT

Assemblage characteristics are related to and dependent on the distance of the knapping site from raw materials for artefact manufacture, and different material types were better suited for certain tasks than other material types. Considerations such as social or territorial limitations or restrictions on access to raw material sources, movement of groups across the landscape and knowledge of source locations can influence the procurement behaviour of Aboriginal people. Raw materials may also have been used for trade or special exchange between different tribes.

3.1.6 MANUFACTURE

A range of methodologies were used in the manufacture of stone artefacts and tools, through the reduction of a stone source. Stone may have been sourced from river gravels, rock outcrops, or opportunistic cobble selection. Hiscock (1988:36-40) suggests artefact manufacture comprises six stages, as follows:

1. The initial reduction of a selected stone material may have occurred at the initial source location, or once the stone had been transported to the site.
2. The initial reduction phase produced large flakes which were relatively thick and contained high percentages of cortex. Generally the blows were struck by direct percussion and would often take advantage of prominent natural ridges in the source material.



3. Some of these initial flakes would be selected for further reduction. Generally only larger flakes with a weight greater than 13-15 grams would be selected for further flaking activities.
4. Beginning of 'tranchet reduction', whereby the ventral surface of a larger flake was struck to remove smaller flakes from the dorsal surface, with this retouch applied to the lateral margins to create potential platforms, and to the distal and proximal ends to create ridges and remove any unwanted mass. These steps were alternated during further reduction of the flake.
5. Flakes were selected for further working in the form of backing.
6. Suitable flakes such as microblades were retouched along a thick margin opposite the chord to create a backed blade.

Hiscock (1986) proposed that working of stone materials followed a production line style of working, with initial reduction of cores to produce large flakes, followed by heat treatment of suitable flakes before the commencement of tranchet reduction. These steps did not necessarily have to occur at the same physical location, but instead may have been undertaken as the opportunity presented.

Although probably less common than the process of flaking stone to modify it, the grinding technique was used within the Sydney Basin. This has been documented by early settlers particularly in the manufacture of axe heads where the end of a cobble was ground to achieve a working edge (Corkill 2005).

3.2 LAND USE HISTORY

3.2.1 INDIGENOUS OCCUPATION

When Aboriginal occupation of Australia is likely to have first commenced, around 60,000 years ago (Mulvaney and Kamminga 1999; Bowdler *et al* 2003; Attenbrow 2010), sea levels were around 30-35 m lower than present levels, and this further decreased to up to 130 m lower than present sea levels (Attenbrow 2010). Sea levels stabilised around 7-6,500 years ago, and as a result many older coastal sites would have been inundated with increasing sea levels. It is possible that areas that are now considered "coastal" would once have limited resources available to Aboriginal people, and as such would have been less likely to have been occupied or used for repeated habitation sites.

Archaeological work at the Madjedbebe site in Arnhem Land in the Northern Territory revealed evidence confidently dated to the period before 45-46 ka and possibly up to 50-55 ka (Clarkson *et al* 2015). In NSW, there is strong evidence available to support Aboriginal occupation of the Cumberland Plain region in the Pleistocene period (approximately 40 ka) and possibly earlier. Work in Cranebrook Terrace was dated to 41,700 years BCE by Stockton and Holland (1974), and a site in Parramatta within deep sandy deposits was dated to 25-30 ka (JMcdCHM 2005). Kohen's 1984 assessment of Shaws Creek in the Blue Mountain foothills yielded ages of 13 ka, while Loggers Shelter at Mangrove Creek was dated to 11 ka by Attenbrow (1987). Deeply



stratified occupation deposits at Pitt Town were dated to 39ka (Apex Archaeology 2018). These ages are obtained from both radiocarbon and optically stimulated luminescence (OSL) dating.

Some experts have cast doubt onto the assessment of the items from Cranebrook Terrace as artefactual (Mulvaney & Kamminga 1999; McDonald 2008), although they do not doubt the results of the radiocarbon dates – it is the association of the artefacts with the dated deposits that is problematic, and Mulvaney and Kamminga (1999) consider that there are better examples of sites with more robust identification of age available. There has certainly been a great deal of research undertaken within the Sydney region in the intervening years.

Aboriginal people have occupied the NSW South Coast for at least 20,000 years (Boot 2002). Occupation sites dating to the Pleistocene period have been dated to c.20,000 Before Present (BP) at Burrill Lake (Lampert 1971) and c.17,000 BP at Bass Point (Bowdler 1970; 1976), with investigations suggesting a very low site occupation intensity during the Pleistocene era, with intensification of occupation commencing approximately 7,000 BP. The evidence at Burrill Lake came from a rockshelter, while Bass Point comprised an open context site on the gentle slopes of a ridgeline. Generally, the Pleistocene occupation of the South Coast is considered to have been sporadic and of low intensity, due to the low population levels postulated during this time (McDonald 2005).

Changing sea levels resulted in the ecological systems of the hinterland areas changing too, resulting in differing resources becoming available. This led to an increase in evidence of habitation of areas from around 6,500 BP, although it is unclear whether this relates to the survivability of more recent sites, or an increase in population. Hughes and Lampert (1982) suggested that a population increase is the only plausible explanation for the exponential increase in Holocene sites from 6,000 BP.

During the Holocene period around 6.5ka, sea levels increased and stabilised, which led to those groups on the coastal fringes turning inland (McDonald 2008). Around 5ka a change in archaeological assemblages can be seen, with an emphasis on the use of locally available stone for artefact production. Around 4,000 years ago people began to decrease their residential mobility and inhabit certain biogeographic zone on a permanent basis (McDonald 2008). Evidence of this was noted in Bomaderry rock shelter, near the Shoalhaven River, that was found to have been used around 1,900 years ago and again at around 1,400 years ago. Lampert and Steele (1993) analysed Aboriginal cultural material and found that the former occupants utilised a wide-range of natural resources. They acquired the animal and plants locally, and the stones used to manufacture implements and tools were procured both locally and further afield.



3.2.2 POST CONTACT OCCUPATION

Following the establishment of the first European settlement at Sydney Cove, the need for additional agricultural land was identified, as Sydney Cove was considered unsuitable for farming. By November 1788, food supplies were running low for the settlement, and an expedition led by Governor Philip set off up the Parramatta River in search of arable land. An area known as Rose Hill (now Parramatta) was settled by a small group of 11 soldiers and 10 convicts. The grain crops at Sydney Cove failed, and the settlement at Rose Hill was ordered to be used for agriculture. These crops were luckily successful, and a further settlement comprising a convict farm was established at Toongabbie.

Exploration of the wider region continued, and in 1791, expeditions travelled the Hawkesbury and Nepean areas, identifying them as likely spots for agriculture. The Shoalhaven region had been sighted by Captain Cook in April of 1770, when he observed a protected bay which was later named Port Jervis, and he recorded evidence of smoke along the shoreline just before dark, which may have been related to Aboriginal campfires near the area now known as Bass Point.

Lieutenant James Grant recorded an account of an early meeting of Europeans and local Aboriginal people as being amicable (Grant 1801), with the Aboriginal people they encountered described as 'more robust than Sydney Blacks'.

James Meehan reached the Shoalhaven River in 1805 as part of his exploration of the region, and noted the extensive stands of red cedar along the lower reaches of the river (Antill 1982). The first official shipment of cedar left the Shoalhaven in 1811, and by the following year seven ships were transporting cedar out of the Shoalhaven.

The Cambewarra and Illawarra Ranges were first explored by Europeans in 1812, by surveyor George Evans. This included a survey of the Jervis Bay foreshores and Evans intended to return overland to Appin, but the difficulty of the terrain led to him abandoning this plan (Griffith 1978). In 1818, James Meehan and Charles Throsby were commissioned to find an overland route between Sydney and Jervis Bay, and a route through Kangaroo Valley was identified with the assistance of two Aboriginal people from the Lake Illawarra region.

Alexander Berry explored the Shoalhaven River environs over several days in 1822, and, together with his business partner Edward Wollonstonecraft, was later granted 10,000 acres on the northern side of the Shoalhaven River with the aim of establishing a permanent settlement. Berry's estates supplied much of the cedar sold in Sydney, as well as maize, tobacco, wheat, barley and potatoes, along with pigs and cattle (Perry 1966).

Following Wollonstonecraft's death in 1832, Berry began to lose interest in the estate, writing as much in 1846 (Perry 1966). The abolition of transportation of convicts and the discovery of gold in the 1850s further decreased Berry's interest in the area, and he began letting farms on clearing leases. By then, the major industries



of the Shoalhaven region included agriculture, dairying and milling (Cousins 1994), as well as timber felling.

The Beecroft Peninsula had been noted by early ships travelling along the east coast and the headland was referred to as Abraham's Bosom, in reference to the Old Testament that regarded Abraham's Bosom as safe and special place. Since the 1800s about 4,200 ha of the Beecroft Peninsula has been under the administration of the Department of Defence, known as Beecroft Weapons Range, for use in weapons and other training activities (Naval Historical Society of Australia 2023). The other areas outside the Weapons Range include the Currarong Township and Abrahams Bosom Reserve, where the current study area is situated.

On 27 March 1928 the steam-ship Merimbula collided with the rocky shore of the Beecroft Peninsula near Whale Point, approx. 350 m west of the current study area. The ship was on a return trip from Sydney to Eden and ran aground in bad weather. The passengers were woken to a grinding sound at 1am. They were rowed to shore in daylight on the same day to the mouth of Currarong Creek. The Merrimbula began to sink the following day. Explosives were later used to open the hull to recover machinery. Most of the vessel had slipped into the ocean but the bow section remained on the rocks where it can still be viewed today.

The first person thought to have settled in Currarong was Alex Carvis in the 1890s. (Currarong Community Association 2023). Carvis was initially a gum getter who made a living from collecting gum from grass trees that was used by Europeans to make a variety of products including perfume, explosives, sealing waxes, and soap (Jervis Bay Maritime Museum). The gum was collected from grass trees, such as the *Xanthorrhoea*, that was also recorded by early settlers to have been used by Aboriginal people to bind stone implements to wooden handle and spears (Dawson 1818:24).

Carvis later established a fishing business and took campers out in small boats, or to fish from the cliffs. Sometime later the Hammer brothers built a shack and started a commercial fishing business from Currarong which sold fish to as far away as Sydney. Currarong slowly established its reputation as a popular fishing and camping spot for people from Sydney, Wollongong and the Shoalhaven area. Visitors came to the area by boat or overland by horse and cart on dirt roads and along the beach. Makeshift tents and huts were erected for accommodation (Currarong Community Association 2023).

According to the Currarong Community Association (2023), the Abrahams Bosom Reserve was established in 1945, and perhaps in commemoration of the Merimbula shipwreck, a walking track, "Wreck Walk" was established. The track commences at Abrahams Bosom Creek and extends through the bush and shoreline to Shell Beach, approximately 400 m to the southwest of the current study area, where pieces of the wreck can be viewed on the rocks leading out to Whale Point. Wreck Walk then

continues northeast to an entry point to Wilsons Beach where the current study area is situated. It then heads south and terminates at the junction of Marions Way walk and Coomies Walk.

To assess the disturbance that may have resulted from historical occupation, a series of historical aerial photographs dating back to the 1970s (earliest available) were reviewed. The images show that by 1975 (Plate 1) the township of Currarong had been established and there was a path leading to Wilsons Beach. By 1987 (Plate 2) several other paths had been established across Beecroft Peninsula but little else appears to have changed in the immediate study area. Images of Wilsons Beach and the surrounds taken from 1993 (Plate 3) and 2023 (Plate 4) also show little change within the study area and immediate surrounds.

The available information establishes that the access path to Wilsons Beach had been in use from at least 1975, which was the earliest available image of the area. This would have resulted in constant impact to the current subject area, which is situated at the base of the path that leads onto Wilsons Beach. The site would have also been continuously impacted to fluctuating tides and extreme weather that can cause abnormally large waves to scour sand dunes, deposit debris, and reconfigure existing sand deposits.



Plate 1: 1975 aerial. Study area in red (Source: NSW Spatial Services HV 2023).



Plate 2: 1987 aerial. Study area in red. (Source: NSW Spatial Services HV 2022).



Plate 3: 1993 aerial. Study area in red (Source: NSW Spatial Services HV 2022).



Plate 4: 2023 aerial. Study area in red (Source Near Maps 2022).



4.0 LITERATURE REVIEW

A review of previous archaeological work within the surrounding region of the study area was undertaken. A number of reports were identified from background research and the AHIMS database and are summarised below, with detailed summaries presented in Section 4.1.

Table 2: Previous heritage assessments undertaken by archaeological consultants in the region

Consultant	Date	Sites Identified	Region
Lampert	1971	Three	Currarong
Bowdler	1976	One	Bass Point
Sullivan	1978	One	Shell Beach, Abrahams Bosom Reserve
Paton and MacFarlane	1989	One	Abrahams Bosom, Beecroft Peninsula
Navin	1991	Numerous	Currambene Creek
Paton	1993	Two	Currambene Creek
Donlan	1996	One	Currambene Creek
Navin Officer Heritage Consultancy	2000	Two	Moona Moona Creek
Wellington	2002	None	Huskisson
Biosis	2010	None	Callala Bay
AMBS	2010	Two	Currarong
Kuskie	2012	Three	Crookhaven Heads to Culburra
MDCA	2013	One	Huskisson
Feary	2014	One	Orion Beach
Feary	2016	One	Huskisson
Feary	2017	Three	Currarong
Feary	2018	None	Huskisson
NHC	2019	None	Huskisson
Apex Archaeology	2021	One	Huskisson

4.1 PREVIOUS ARCHAEOLOGICAL WORK

An analysis of previous archaeological work within the study area assists in the preparation of predictive models for the area, through understanding what has been found previously. By compiling, analysing and synthesising the previous archaeological work, an indication of the nature and range of the material traces of Aboriginal land use is developed. An understanding of the context in which the archaeological assessment is vital, as development does not occur within a vacuum, but within a wider cultural landscape, and this must be considered during any archaeological assessment in order to develop appropriate mitigation and management recommendations.

4.1.1 PREVIOUS REGIONAL HERITAGE ASSESSMENTS

A number of previous archaeological assessments and research projects have been undertaken within the Beecroft Peninsula and in the surrounding Jervis Bay area. Some of these assessments are summarised below.



R.J. LAMPERT 1971

Lampert excavated three rockshelters along Blacks Cave Creek; Currarong 1, Currarong 2, and Currarong 3, approximately 2 km southwest of the current study area. Currarong 1 had the most archaeological material but also had a deep previously excavated pit at the rear of the shelter that had been backfilled with shell.

The combined total of stone artefacts across the three shelter included recognised tool-types and implements including 51 scrapers, 46 backed blades, 11 eloueras, 50 fabricators, two flakes with hafting gum, four fish hook files, eight fish hook blanks, 46 bone points, two edge ground axes, 19 hammer stones, three anvils, and two ochre pencils. Some of the fabricators were proposed to have been quartz cores that were flaked using the bipolar method to produce small quartz flakes that could be used as spear tips. Some of the fabricators also had use-wear polish that demonstrates they were also used as a tool. The bone points made of mammal and fish bone had some polish on the end. The polish indicates they would have been used on something soft; perhaps used to sew possum skins or bark canoes together. A lizard mandible was also found on the surface and had gum attached to it. It was suggested that this may have been worn as an ornament, rather than used as a tool. The fish hooks varied in size and paralleled that type of fish that were caught.

Plant material including the *Xanthorrhoea* and *Melaleuca* were also found. As mentioned in the previous section on land-use history, the *Xanthorrhoea* produces resin that was used to haft stone tools to wooden implements. The stalks were also used to make spears. The *Melaleuca* produces a soft bark that was noted as being used to wrap babies.

A wide range of animal remains were found, including wallaby, kangaroos, possums, bandicoot, birds, reptiles, whales, seals, crustaceans and fish. All of which could be obtained locally from the bushland, seas, estuaries and rock platforms. The shells recovered showed that early in the 4,000-year period only one species of shellfish was used; the estuarine rock oyster. This species was heavily exploited and later replaced by mud whelk. Over time there was a gradual increase of rocky shore species such as turbon, nerite, and hairy mussel. During the most recent phase there tended to be representation from both estuarine and rocky shore species. Lambert suggest this may be due to an initial over-exploitation of a particular species; or a general move from specialised shell-fish gathering to widespread exploitation of local faunal resource.

Four human skeletons were found in Currarong 1 and the remains of at least three individuals were found in Currarong 2. They ranged in ages from approx. 14 years old to infants. No adult skeletons were retrieved.

The basal level of the shell midden contained at Currarong 2 was 3, 740 +/- 100 BP. On the basis of sedimentation rates, it is suggested that occupation in Currarong 2 could extend back to 7.000 years BP.



BOWDLER 1976

Sandra Bowdler excavated a shell midden at Bass Point, approximately 90 km north of the current study area. The lowest levels dated to approx. 17,000 +/- 650 BP. Shell hooks and shell hook blanks were found exclusively in the Upper Midden, that dated to approx. 600-years BP. Bone points were also found in all layers where bone was preserved. Bowdler proposed that the only fishing technique that was used at Bass Point between 3,000 and 600 years ago was spearing, which would have incorporated the bone points onto wooden spears, used by men.

Snapper, a fish that can be caught by line or spear, was most prevalent in the layers up until the introduction of shell hooks. After this there was an increase in the rock cod species, which are more conventionally taken by hand-line. There also appeared to be a diminution of overall size of the fish after the introduction of fish hooks. Bowdler argues that this is because the use of barbless hooks and vegetable fibre would impose size restriction on catches.

With regards to shell fish within the midden, several species were noted to decline in relative importance after the introduction of shell hooks; most notably turban, triton and cart-rut shells (found in lower littoral rock-shelf area). These were replaced with edible blue mussel (found in the upper littoral rock shelf area).

Bowdler proposed that no convincing environmental explanation could be found for this, nor could it be explained by differential preservation. By way of explanation for the changes in shellfish species and numbers over time in the shell midden, Bowdler proposed that the introduction of shell hooks enabled women to fish in a new way. This replaced time that would have been spent collecting the larger energy-rich gastropods when the tide was low, to gathering smaller and less economic mussels available throughout the day.

SULLIVAN 1978

Marjorie Sullivan was engaged by Shoalhaven City Council to inspect and assess a previously registered shell midden site at Whale Point, approximately 350m west of the current study area.

The stratified shell midden extended across the foot slopes of the Whale Point headland. The front (westward) margin of the shell that faces the sea had been cut through by wave action and a vertical face about 50 – 100 cm high was exposed along its entire length. A section near the centre of the face was also exposed from gullying along a former vehicle track. These exposures permitted Sullivan to closely examine the contents.

Sullivan found that the exposed seaward-facing portion of the shell midden had been “clearly and unequivocally reworked “. This was evident, for example, by the considerable amount of shell grit and appreciable amounts of water-worn shell. Much of this type of shell grit and water-worn shell was seen on the beach below the midden and contained the same species. However, Sullivan pointed out it was not



possible to determine if this material derived from the midden or had been washed up naturally from the adjacent platform.

Sullivan proposed that there were possibly two areas within the deposit, but further inland from the beach, where there could be a substantial depth of intact shell midden. One was on the gently sloping crest above the 5.5 m contour line, and the other one was on the main spur south of the walking track. Overall, it was concluded that the reworked portion of the deposit was so thoroughly disturbed that little of scientific value could be retrieved from it, even if it was carefully excavated. It was recommended that although the reworked portion of the deposit had little scientific value, its presence protected the intact deposit that lies behind it and steps should be taken to stabilise it.

PATON AND MACFARLANE 1989

Paton and Macfarlane with the assistance of a research team undertook an excavation of a rockshelter on the Beecroft Peninsula. The project was carried out as a joint project with the NSW Department of Lands and the NSW National Parks and Wildlife Service as part of a management plan for the site. The excavation of the site was discussed with the Jerringa Aboriginal community, who also participated in the fieldwork.

The shelter was in a series of low overhangs on the steep-sloping northern face of Abrahams Bosom Creek Valley. It had a south-easterly aspect and received morning sun. It was located approx. 20 m above the swampy base of the valley, and was 10 m long, 4 m wide and 0.6 m to 1.6 m high.

There was 115 cm of deposit built up on the sandstone floor. On the surface, there was a large silcrete retouched artefact at the front of the shelter, and a pile of extremely large *Turbo torquata* shells at the back of the shelter. Crushed shells and pieces of fish bone were also found on the surface of the deposit which had a black charcoal rich appearance.

Two 1 m x 1 m pits were dug, one at the front (AB1) and one at the back (AB2) to ascertain the deposition. The excavation was described as broadly stratigraphic where a change in texture and colour were observed. The deeper units were subdivided into 10 cm spits.

A total of 127 stone artefacts were recovered from both pits. The range of stone artefact raw materials in the AB1 shelter was similar to those found in the Currarong shelter excavated by Lampert (discussed above) and consisted of predominately grey quartzite and quartz. There were only a couple of exhausted cores and utilised flakes. A metamorphic rock which Lampert termed rhyolite was also found but used to a lesser extent. As the roof fall contained conglomerates that were of the same material as the artefacts only those flakes that showed distinct bulbs, platforms and impact points were included.



Non-stone artefacts retrieved included two shell artefacts and two bone points. One of the shell hooks was made from *Turbo torquate* shell, similar to others found on NSW South Coast. One of the bone points was made from a macropod fibula (kangaroo). Two fishhook files and a fish hook were also found.

Eighteen different species of shellfish were present in the deposit. *Mytilus edulis planulast*, the edible mussel, was the dominant species found predominately in the deposits from the 700-1200 years B.P. There were also high numbers of *Nerita*, through the same levels as the mussels, but these were also present in the lower layers that did not have mussels. It was suggested that this may be because *Nerita* has a tougher shell. *Crassostrea commercialis*, oysters and *Cellana*, limpets are also present. These species are found on the rocky shore. There was also a low percentage of estuarine shellfish, *Velacumantis*, mud whelk, and *Pyrazus Hercules* club whelk. The turban shells, such as *Turbo torquate* and *Turbo undulata*, were considered to be a sub-littoral species. These and other shell species, such as abalone, were present in smaller numbers.

The faunal remains included bone and teeth from macropods, rat and lizard remains, seals, shearwater and mutton birds, as well as penguin bone. Fish bone accounted for 70% of the faunal assemblage. The fluctuating amount of animal bone in the deposit was proposed to reflect a more opportunistic gathering, such as migratory birds washed ashore, rather than the active hunting of them. Or, it was proposed, they may have been traded in and the butchering and disposal of bone occurred outside of the shelter. A small amount of plant remains, and red pigment were also found.

Overall, it was suggested that Abrahams Bosom shelter was a late Holocene occupation site that was used from approx. 1,600 years ago. The occupants had practiced a mainly maritime economy and utilised the resources of a very localised area. The site was dominated by mussel shell but had a low density of stone artefacts with limited range of stone artefact types. The stone artefacts were used for activities such as trimming or sharpening, and a shell artefact was used for scrapping. The larger bone point was most likely used for piercing skin and the small one could have been used on the tips of a multi-pronged fishing spear. The fish hook files and a fish hook (not in association) presented evidence that shell was worked on site.

It was suggested that the diversity of natural resources available around the Beecroft Peninsula and Jervis Bay were not reflected in the cultural debris of individual sites but would be seen when the results of all sites are combined.

Some of the recommendations included that the 'site viewing platform' be maintained and the regular inspections of the site be undertaken. These should be undertaken in consultation with the Jerringa Aboriginal Community.



NAVIN 1991

Navin undertook an archaeological assessment in advance of the proposed construction of a road linking Woollamia with Callala Beach, approximately 13 km west of the current study area. Several alignments were considered, and all required a crossing of Currambene Creek approximately 3 km north of the creek mouth. An initial feasibility study identified a need for further investigation of the proposed alignments.

The report contained detailed historical background for the region, including past land use history, Aboriginal spiritual mythology, and information about prominent Aboriginal people in the area, including their burial locations on the banks of Currambene Creek.

As part of the assessment of the proposed routes, each route was surveyed by pedestrian survey, and a number of shovel probes were excavated along the route in areas considered to have potential for subsurface archaeological material to be present.

Artefacts were identified at depths of between 8-31 cm and were considered to demonstrate occupation of at least 1,000 years old, based on the assemblage characteristics. A range of other sites were also identified during the survey, including artefact concentrations, midden sites, scarred trees and an historical Aboriginal campsite, as well as historical artefacts and a potential burial site on the basal slopes adjacent to the creek flats.

The assessment concluded that the area on the northern bank of Currambene Creek known as Bilong (now Myola) is highly sensitive to the Aboriginal community and they did not wish for this area to be disturbed in any way. The archaeological evidence identified was considered to be of high significance and it was believed that disturbance of this area through the construction of a new road and bridge would be unacceptable.

PATON 1993

Paton was engaged to undertake an archaeological investigation in advance of proposed erosion controls on Currambene Creek, approximately 15 km to the west of the current study area. The works were necessary to prevent further erosion which threatened to undermine the village of Myola. Stone artefacts were identified by NPWS officers on the banks of the creek and as a result the archaeological investigation was commissioned.

The site on the banks of the creek comprised a total of seven artefacts, made of chert and silcrete. A further two artefacts were located approximately 40m further from the creek. The site was assessed as having low scientific significance. It was recommended that the erosion control measures be implemented, in accordance with a Consent to Destroy to permit impact to the artefact scatter.



DONLON 1996

Following the discovery of a human skull on the northern bank of Currambene Creek, Denise Donlon was engaged to prepare a report on the skull, specifically for the local Aboriginal community. A young boy discovered the skull and following its identification as human in origin and likely Aboriginal, NPWS took custody of the skull and informed the Jerrinja LALC.

The skull was considered likely to belong to an adult Aboriginal male, based on the shape of the glabella (between the eye sockets) and the shape of the eye sockets, and likely to be between 18-40 years old when he died. The original burial location of the skull was not clear, and there was a possibility that the skull may have washed in from further up the creek. The skull was considered to be hundreds rather than thousands of years old.

The report concluded that there is a possibility of further burials occurring along the banks of Currambene Creek, with sand dunes inside bays, estuaries and harbours considered a common location of inhumations.

NAVIN OFFICER HERITAGE CONSULTANCY 2000

Navin Officer undertook an assessment for the proposed crossing of Moona Moona Creek by a reclaimed water pipeline, approximately 15 km south west of the current study area. Two registered sites were located within the proposed pipeline easement, with one comprising a small scatter of estuarine shell and a small number of stone artefacts, and the other comprising a low-density artefact scatter of two stone artefacts within a 4x4 vehicle track north of Moona Moona Creek. Both sites were considered to be of low significance.

It was proposed to underbore the creek to avoid undetected midden material which may have been present immediately adjacent to the creek bank. This also avoided the known sites within the proposed easement.

WELLINGTON 2002

Rodney Wellington, Aboriginal Sites Officer SAHU/Nowra, undertook an archaeological assessment in advance of proposed works to enhance a bushfire protection area adjacent to residences on Callala Street, Huskisson, approximately 11 km to the west of the current study area. Bushfires impacted the Jervis Bay National Park over the 2002 New Year period, and several houses were damaged or destroyed. An existing firebreak was proposed to be increased to reduce the continuity of canopy in this area. As the site was on a wetland margin, the potential for Aboriginal sites to be present was considered to be high.

No archaeological sites were identified, and the absence of any sites was considered to reflect the area's unsuitability for Aboriginal occupation in the past due to the waterlogged nature of the soils, and the accessibility of nearby areas more conducive for habitation.



Biosis 2010

Biosis undertook an Aboriginal Cultural heritage Assessment that included test excavations for the proposed rezoning of land along Emmett Street, Callala Bay, approximately 13 km northwest of the current study area.

Biosis's study area was approximately 36 ha in size and included three types of landforms. These were identified as 'flats' on the southern quarter, 'gently inclined simple slope' in the central portion, and a 'small rise' in the northern section. A pedestrian survey was undertaken targeting areas of exposures. The land was found to have been disturbed primarily by tree uprooting which was likely to have been associated with the 2019 bush fires.

No Aboriginal cultural material was identified during the survey. A total of 29 test pits were then excavated across eight transects to test the subsurface potential for archaeological remains. Three across the small rise, 17 across the simple slope and nine across the flat land form. The soil profiles across all three landforms were highly congruent with little variation. No artefacts were identified across the area.

It was proposed that the study area, following Clarke and Kuskie's (2006) resource zone model, fell within the area considered to be 'outside primarily and secondary resource zones'. As a result. It was predicted that there was a low potential that Aboriginal object would be present within the area. It was proposed resources will most like occur in coastal fore dune about 1.5 m east of their study area.

No further archaeological assessments were recommended.

AMBS 2010

AMBS was engaged to undertake an archaeological salvage on behalf Shoalhaven City Council for the proposed Currarong Sewerage Scheme, approximately 1km to 2.5 km south west of the current study area. Their study area was within the residential township of Currarong (Areas 2-4) but also extend along the pipeline corridor to Beecroft (Areas 1 and 5).

AMBS noted that previous excavations that had been undertaken on the Beecroft Peninsula at the time of their assessment had been primarily conducted within rock shelters, whereas their primary aim was to salvage a sample of the archaeological deposit contained in a wider open-area landscape within the Beecroft Peninsula. This would allow for a better understanding of the archaeological analysis of recovered material and to determine the integrity (degree of disturbance), and nature of the deposit. The artefactual and faunal remains would also shed light on the type of activities that had been carried out.

Five pits measuring 1m x 1m were excavated in Area 1 within a 'dune' landform along Currarong Road. It occupies a narrow neck of land between the beach to the east and an estuary of Jervis Bay to the west. The pits were excavated to the depth considered to be culturally sterile, which was found in one pit to be 95 cm.



Five pits measuring 1 m x 1 m were excavated in Area 2 on the foreshore of a rock platform situated on the southern end of Warrain Beach, Currarong. A series of nine auger holes were initially excavated to determine the location of midden material. The test pits were excavated to the depth considered to be culturally sterile. The excavation depth reached up to up to 95 cm in depth in one pit.

Eight auger test holes were excavated in Area 3 and Area 4. No auger holes were undertaken in Area 5 as the Aboriginal community expressed a wish for the area to be 'monitored' during the proposed works. As such, Area 5 was not archaeologically assessed. No Aboriginal cultural material was found in these areas and the landforms appeared to have experienced significant erosion and loss of the top soil.

A total of 484 stone artefacts were recovered from Areas 1 and 2. The assemblage was dominated by silcrete (51%), milky quartz (29.5%) and indurated mudstone (11.6%) Other material in a lot smaller amounts was also found, including, chalcedony, fine quartzite, silicified wood and igneous. Most of the artefact types were complete or broken flakes. There were also five retouched flakes, including two backed artefacts and 10 cores. The material was most likely derived as pebbles and cobbles, and there was evidence that bipolar and direct percussion technology was used.

Two of the AHIMS #52-5-0482 (in Area 1) and AHIMS #58-2-0385 (in Area 2) were assessed as being of high scientific significance. They had stratigraphic integrity and were considered to have the potential to contribute further information about Aboriginal diet and stone artefact technology.

The AHIMS #52-0428 site was adjacent to Carama Creek within the sand section connecting Beecroft Peninsula to the mainland. It contained backed blades and a shift in targeted shellfish from turban to mussel shell. A total of 8.81 kg of shell, .45 g of bone, and 158 stone artefacts were recovered from five 1m² pits.

AHIMS #58-2-0385 was an extensive open midden along the foreshore adjacent to Peels Reef. It had stratigraphic integrity and shows indications of a mounding deposit. It contained a total of 326 stone artefacts, 243 kg of shell, and 1.88 kg of bone from five 1m² pits. Backed artefacts, shell hooks and blanks, and edible mussel showed evidence of cultural change over time.

The two PAD areas did not contain any archaeological material and were found to have been significantly disturbed.

It was recommended that the excavated material from AHIMS #52-5-0482 be subjected to carbon dating in order to compare it to other sites and that the shell hooks be subjected to further analysis. It was also recommended that the PAD sites AHIMS #58-2-0388 and AHIMS #58-2-0389 be deregistered from the AHIMS database.



KUSKIE 2012

Peter Kuskie from South East Archaeology was engaged to undertake an ACHA for a proposed mixed-use subdivision at West Culburra, approximately 11 km north west of the current study area as the crow flies. The study area comprised 99 ha of land situated within the Lower Shoalhaven district on low, undulating terrain that extended from Crookhaven Heads and Culburra Beach. A number of landforms including simple slopes, ridge crests, spur crests, hillocks and flats were within the study area.

The investigation included a review of previous archaeological assessments and registered Aboriginal sites within a broad 88 km search area. No sites were recorded as being within the area, but 61 sites were within the large search area. These included numerous burials, ceremonial sites, rockshelters with deposit, grinding groove sites, 29 shell middens and 16 open artefact scatters. However, the 18 sites that were recorded immediately adjacent to the investigation area were all shell middens, except for one open 'camp site' with stone artefacts.

The background research undertaken by Kuskie identified that the northern side of Lake Wollumboola, approximately 10 km north west of the current study area, had been noted by the Shoalhaven Antiquities Committee to have contained a large amount of material culture. These included Bondi points (500), several eloueras, geometric microliths, fish hooks, bone needles, a burial, and an edge-ground hatchet. It was noted that test excavations undertaken by Dibden in 2006 also recovered stone artefacts including flakes, flake portions, cores, retouch and utilised flakes. They were predominantly made from silcrete but also included quartz, fine-grained volcanic, quartzite, and chalcedony. Isolated shell fragments were also noted.

Kuskie also noted that Cane (1988) had recorded numerous sites on the peninsulas surrounding Jervis Bay, these were mostly middens and rockshelters with deposit. He found that 80 middens located on Beecroft Peninsula were directly associated with rocky shore platforms and 19% were located in sand dunes. Cane classified the middens based on shell content into three types:

- Estuarine – dominated by mud oyster and mussel
- Hard Shore – dominated by turbo, periwinkle, abalone and limpets
- Mixed middens – containing a mixture of hard and soft shore species

The survey undertaken by Kuskie (2012) included Graham Connolly of the Jerrinja Traditional Owners Corporation and Gerald Carberry of the Jerrinja LALC. It focused on material culture such as stone artefacts, grinding grooves and stone artefacts. And during the inspection the stakeholders were also asked of their knowledge of any areas of cultural significance with the investigation area, for example; sites or places with ceremonies, spiritual/ mythological beliefs and traditional knowledge, sites or places with historical or contemporary significance



No sites were identified within Kuskie's study area but three sites were identified immediately adjacent to the study area. They comprised eight stone artefacts including one retouched piece, one hammerstone, one microblade core, two flakes, and one lithic fragment. They were made from raw material including silcrete, quartz and volcanic. The hammerstone which was made from volcanic material had extensive edge damage at both ends indicating it was used as a percussive instrument to flake pieces of stone.

Kuskie found that as two of the sites were within 100 m of the Crookhaven River estuary they have been part a wider activity zone. Sixteen of the previous sites were middens and were within 30m of the shore line. As pointed out by Hughes (1983), this indicates that exploitation of estuarine resources in this area occurs very close to those resources. In relation to Clarke and Kuskie's occupation model, much of their study area was considered to be outside of primary or secondary resource zones. Therefore, they inferred that Aboriginal occupation of much of the investigation area would have generally been of low intensity, and probably related to transitory movement through the landscape and hunting/gathering by small groups of people during the course of the normal daily round.

It was recommended that test excavations be undertaken within portions of four of the areas.

MDCA 2013

Mary Dallas Consulting Archaeologists were engaged to assist in preparing an ACHAR to support an AHIP application for a site at 2 Murdoch St, Huskisson, following the identification of a shell midden deposit during approved development works. Excavation for basement carparking bisected the midden deposit, which extended from the surface to a depth of up to 0.7m, and was located within a dark grey/black sandy soil deposit. The midden was located in the north-western corner of the site and was 4.4m in length north to south.

The midden was identified to contain primarily mud oyster, mud whelk, and hairy mussel shells, and "no fish or mammal bone, stone, bone or shell artefacts, hearthstones or concentrations of charcoal, often associated with midden deposits, were noted" (MDCA 2013). It was further noted that the midden deposit was contained within the dark grey/black sandy deposit, and did not extend further into the surrounding paler sands.

Low-density surface scatters of mud oyster shell fragments were noted across an area of exposure close to the western boundary of the site. Further to the southwest corner of the property, a highly disturbed area did not display any evidence of midden material which may have been upcast. The northern face of the cutting did not display any evidence of midden material, and there was no other evidence of midden material across the remainder of the site. It was considered that the midden



material was contained to an area approximately 4x4 m in the western portion of the site, based on the evidence of the exposed deposit and surface expressions.

Further, two large spoil mounds which had been placed on the adjacent southern allotment were inspected due to concerns raised by the Aboriginal community regarding potential disturbed burials. These mounds comprised sterile brown sand. Some shell was observed but was considered to be naturally deposited due to the small size of the shell and their recent age. No bone was noted within the spoil heaps.

Overall, the midden site was assessed as having local significance. Further mitigation measures were proposed as the midden was located within an area proposed for a swimming pool. Mitigation included investigation to confirm the lateral extent and contents of the site, and for a portion of the site to be salvaged for further assessment. It was also recommended that all on-site workers should take part in an Aboriginal Cultural Heritage Awareness Induction prior to commencing work on site to ensure they understood the significance of the site, and the potential for further Aboriginal cultural material to be present within the site.

Subsequent to the finalisation of the report, the proponent for the project determined not to install the pool, thus preserving the remainder of the midden within the site. No further archaeological work was undertaken within the site, although an AHIP was granted for the footprint of the building to permit the development to proceed.

FEARY 2014

Sue Feary was engaged by Shoalhaven City Council to undertake an ACHAR in advance of the proposed construction of a 500 m shared path along Orion Beach, between Huskisson and Vincentia. A known Aboriginal site was located immediately adjacent to the eastern end of the route. This site comprised a low-density deposit of seven stone artefacts and dispersed midden material identified at five discrete locations along the proposed pathway.

These locations included along the cliff top and a small promontory. The sites were considered to be of low cultural significance and the proposed works would likely assist to protect the sites and any additional archaeological material that may have been obscured by ground cover at the time of the survey, through covering and stabilising the ground surface.

FEARY 2016

Shoalhaven City Council engaged Sue Feary to undertake a due diligence assessment of a proposed shared path across Moona Moona Creek at Huskisson. The new bridge was proposed to be constructed adjacent to the existing vehicle bridge. She notes that an AHIP was issued in 2000 for one of the sites (#58-2-0349) identified by NOHC in 2000 for the reclaimed water pipeline.



The study area was considered to be highly disturbed by various works over the years, including the construction of the vehicle bridge and a shared path on either side of the creek. A small area of archaeological potential was identified on the southern side of the bridge, but leaf litter obscured the ground surface. It was recommended to avoid this area during the proposed works, or if avoidance was not possible, it was recommended to undertake further investigation of the area. It was also recommended to avoid the location of site #58-2-0349 despite the site on Warrain Beach having had an AHIP issued, or applying for a new AHIP to permit further harm to occur.

FEARY 2017

Feary was engaged by Shoalhaven City Council to assess dunes that had potential shell middens. Severe storms in 2016 had caused major dune erosion and damage including damage to recorded middens in the dunes and to most of the beach access tracks.

The aim of the ACHA was to conform to statutory requirements to enable issuing of an AHIP. This would allow harm to Aboriginal sites during the dune remediation and stabilisation works and reinstatement of beach access paths along Warrain Beach and in front of Beecroft Parade at Currarong, approximately 1.6 km southwest of the current study area.

The field survey inspected the north-facing dune that covered approx. 800 m and bordered the beach between Peel Street on the west, and Currarong Creek on the east. This area included the sites AHIMS #58-2-0067 (western end) and AHIMS #58-2-0068 (eastern end), and no midden was identified in the middle section of the beach. Although there was substantial vegetation on top of the dune, storm activity had impacted the face of the entire dune to some degree. In some sections it was not possible to identify the stratigraphy because sand fall had covered the depositional boundaries. Shells including mussels, limpets, pipis and mud whelk were exposed. Some areas also included historical rubbish.

The 107 m of dune (AHIMS #58-2-0385) that faced the ocean on the north side of Beecroft Parade was inspected. Sections of the dune were found to contain some deep layers of shell within a dark grey sandy matrix and a wide-range of shell species including mussel, nerites, limpets, chitons, and several quartz flakes were observed. However, the presence of bricks and other building waste indicated a high level of disturbance. The dune frontage had also been flattened and excavated for houses causing extensive damage to the midden.

It was recommended that an AHIP application be submitted for three midden sites to allow for the following:

- Formalising pedestrian access to Warrain/Currarong Beach from Warrain Crescent. This would include a staircase and sand ramp made of a Fibre Reinforced Plastic (FRP) over the upper dune and a treated pine ramp placed



at an angle across a beach-fill mound to provide access to the toe of the existing dune face.

- Dune remediation works, including sand scraping and replenishment and construction of a groyne (sand filled geotextile bags) on Warrain beach. This would involve removing sand from the mouth of Currarong Creek and spreading out over the impacted areas
- Construction of a rock wall to at Beecroft Parade to protect the dune and residences from storm waves.

Feary concluded that as the site was located on a coastal edge, Currarong faces major problems from rising sea levels and increasing storm events. At the time of Feary's report an engineering firm had been engaged by council to examine long and short term options for protecting both the natural environment and residence from the effects of storm damage.

FEARY 2018

Sue Feary undertook an Aboriginal due diligence assessment in advance of the proposed sale and redevelopment of the Anglican Church grounds at Huskisson. The church grounds were suggested to contain the grave of an Aboriginal man known as Jimmy Golding/Billy Budd II. The study area was considered to be highly disturbed due to the long history of use for church activities, and no surface expressions of artefacts were noted within the church grounds.

It was concluded that there were no Aboriginal archaeological constraints to the redevelopment of the site, although it was recommended that the area identified during a ground penetrating radar survey as potentially containing numerous graves should be avoided by any works. It was further noted that the grave of Jimmy Golding, if present within the study area, would fall under the auspices of the *NSW Heritage Act 1977* rather than the *National Parks and Wildlife Act 1974*.

NATIONAL HERITAGE CONSULTANTS 2019

National Heritage Consultants (NHC) were engaged to prepare a due diligence assessment in advance of the proposed development of Lots 81 and 104 DP755928, located in Huskisson. It was proposed to construct a multi-storey apartment building with basement car parking and a hotel, with associated facilities such as swimming pool and tennis court.

The two detailed surveys undertaken as part of the assessment did not identify any surface archaeological material, either artefactual or midden. Further, a reassessment of the shell midden site at 2 Murdoch St, Huskisson considered that "the shells/shell fragments were not in sufficient concentration or coherence to properly represent a midden feature, more appropriate nomenclature is to describe the shells/shell fragments as a 'shell scatter'. Furthermore, the shells were not associated with the usual supplementary components of an Aboriginal midden, such as animal bones, pieces of charcoal and artefacts: the shells at best are a collection



of shell manuports, and may relate to non-Aboriginal occupation of the former house on the lot or to the former public reserve declared in 1907 for recreational 'oystering' (NHC 2019).

The site was considered to be heavily disturbed, and the level of disturbance coupled with the lack of surface evidence of Aboriginal occupation of the site, led to a conclusion that the site was unlikely to contain Aboriginal cultural material that would be impacted by the proposed works. It was recommended that the works could proceed with caution.

APEX ARCHAEOLOGY 2021

Apex Archaeology was engaged to undertake an Aboriginal Cultural Heritage Assessment following the identification of potential archaeological material during an approved development works at the Huskisson Hotel.

Numerous archaeological assessments had previously been undertaken at the hotel for various developments over the past 20 years. Recent construction developments on the hotel had been commenced in line with recommendations made by these previous assessments. However, during works an area of potential shell midden was exposed and works were halted. Heritage NSW was contacted, and they advised that an AHIP would be necessary prior to the works being finalised. The site had been registered as AHIMS #58-2-0488.

Apex Archaeology's assessment found that multiple geotechnical assessments across the site by different firms confirmed that the site contained significant level of fill. This fill was extended to a depth of 600-700 mm and overlaid residual sandy clay. The shell deposit was within this layer and was considered to have been placed there prior to the construction of the hotel buildings in 1893.

The assessment of the potential culturally deposited identified that the shell was sparse and fragmentary. Some of the larger shells fragments were identified as *Anadara spp* (cockle) but the others were too broken and small to identify. The shell was located above and below a lenses of clay fill and there was no evidence of any Aboriginal stone artefacts, animal bones, charcoal fragments, or other feature suggesting it was associated with Aboriginal activity within the area.

It was concluded that based on the results of the cultural heritage and archaeological assessments to date, it was considered unlikely that the shell deposit identified within the study area was of Aboriginal origin. However, as it was not possible to definitively state that the shell deposit was or was not of Aboriginal origin, and because it was already registered on AHIMS as an Aboriginal shell midden, the exposed area of shell should be managed properly. It was recommended that the area be covered with geofabric or similar textile, and turfed or covered with fill to ensure no further impact occurs to it.



SUMMARY

In summary, a number of archaeological investigations have been undertaken within the Beecroft Peninsula and in the neighbouring Jervis Bay area since the mid 1900s. These have been for research projects and to fulfill statutory requirements prior to the construction of buildings and civil works. The results of these investigations have demonstrated that this resource-rich coastal area has been used by Aboriginal people for at least 4,000 years BP, but probably for much longer.

The excavations at the rockshelters within the Beecroft Peninsula at Currarong and at the Abrahams Bosom rockshelters revealed that a wide variety of stone tools/implements/weapons including hammerstones, anvils, axes, backed blades and scrapers were used. Fish hooks made from shells were also present and indicate a change in fishing practices from spearing to catching by line in the last thousand years. Small and large animal bones sharpened to a point were also unearthed. The small ones could have been used as tips on pronged fishing spears, and the large ones used as needles to puncture holes through animal skins to make cloaks. Plant remnants, such as the *Xanthorrhoea* grass plant which Aboriginal people used to make resin to secure stone tools to wooden handles and the stalks were made into spears, were also found.

The abundance of shells uncovered in clear stratigraphic layers also showed that rock platform shellfish species and estuarine species were used a reliable source of protein. Evidence from the Currarong rockshelter established a change over time in the target shellfish species. Initially the estuarine rock oyster was heavily exploited at the beginning of site use 4,000 years ago. It was then replaced by another estuarine species - the mud whelk. Then, over time, there was a gradual increase of rocky shore species such as turban, nerite, and hairy mussel. During the most recent phase there tended to be representation from both estuarine and rocky shore species.

Shell middens found within the Beecroft Peninsula and Jervis Bay area outside of rockshelters are generally not as well preserved. These middens in open areas have been largely impacted by high levels of disturbance from historic land practices and, depending on where they are situated within the landscape, subject to from wind and wave activity. These impacts have led to severe erosion and reworking of exposed shell, especially those within sand dunes facing the sea. Although some of these middens have been proposed to undergo mediation work to protect them, like the ones assessed by Feary in 2017 at Currarong, they are all threatened with the continuous rise of sea levels.

With regards to the current study area, the shell midden on the Beecroft Peninsula that is most comparable to the Wilsons Beach midden, is the one registered (AHIMS #58-2-0055) at Shell Beach assessed by Marjorie Sullivan in 1978. It is located approximately 500 m south west of Wilson's Beach and is of a similar size, and also faces westward within the same sand-dune landscape setting. It was concluded that



the midden had limited significance due to the high levels of disturbance, but likely protected midden deposits still buried; and as such, stabilisation works were necessary to prevent further impact.

4.2 AHIMS RESULTS

A basic search of the study area of approximately 400 m x 300 m was conducted on 21 November 2022 and identified one registered site within the study area. A subsequent extensive search was undertaken over the same area on 6 June 2023 which identified the initial site AHIMS #58-2-0054 (Crookhaven Bight; Honeysuckle Point). The site features listed are 'shell' and 'artefact'.

The site card for AHIMS #58-2-0054 states that the site had initially been recorded by Stephen Wiley in 1977. It was noted at the time as being at the western side of a small beach and at the end of a track. The site description detailed the midden was a 15 m long, 15 m wide and 2 m deep shell midden with 'mussels and turban'. The condition was considered to be mostly stable and covered by trees, but the front side was noted as being eroded and reworked, and interspersed with washup. There was no mention of any stone artefacts being found.

The site was inspected three years later in 1980 by G. Connolly, who at the time was a trainee site recorder and had undertaken the inspection on behalf of the Tribal Elders of Roseby Park. Connolly described the site as being an exposed site below a dune surface and the exposure was approximately 50 cm deep and 10 m long. Shell species were noted as comprising "limpets, conchs, abalone, periwinkle, and pippies". The site condition was considered to be reworked due to erosion. Again, no stone artefacts were mentioned. A sketch map (Plate 5) of the area was prepared, although this is not to scale.

As can be seen in Figure 6 below, AHIMS #58-2-0054 is the only site registered on Wilsons Beach and within an approximate 300 m radius. It should be noted that the coordinate location for the site is outside of the proposed works area for this project, but the midden deposit is considered to extend outside of the coordinate location as per Plate 5.

A copy of the search results is appended in Appendix F and have been utilised for the AHIMS site mapping.

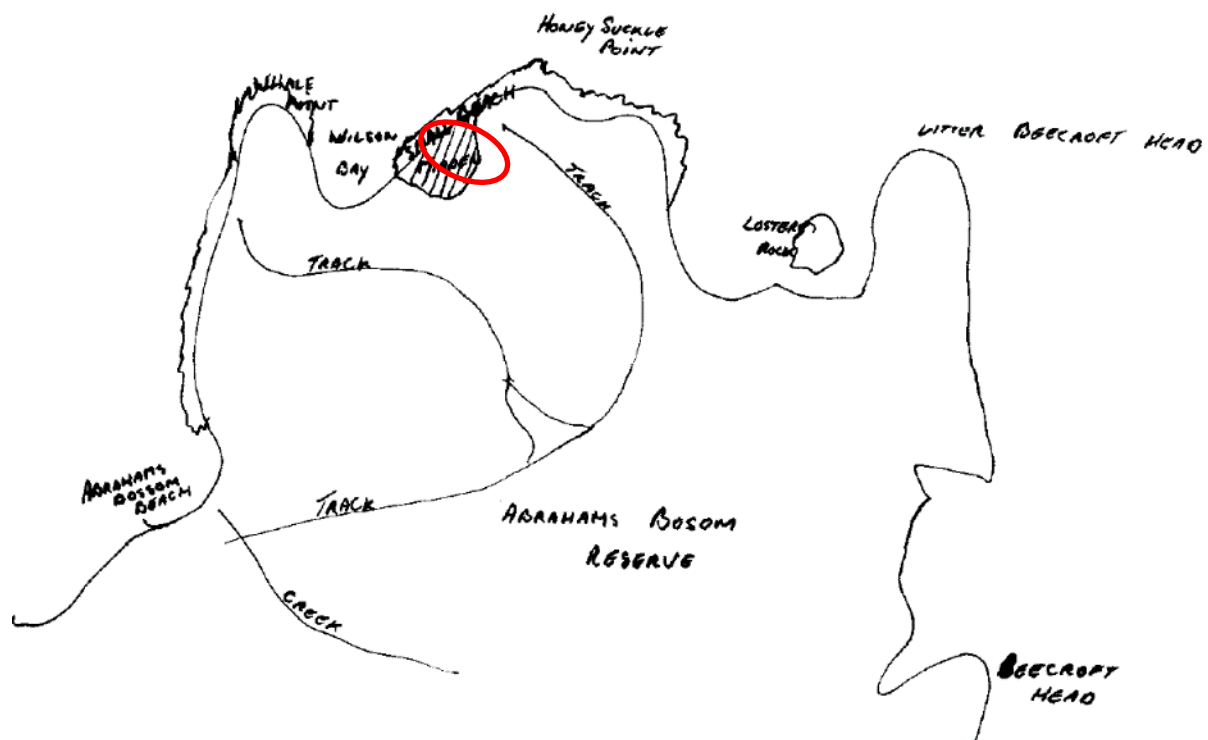





Plate 5: Sketch map of location of AHIMS #58-2-0054 (not to scale; approx study area circled)



 Study Area

 Lot Boundaries

 AHIMS site 58-2-0054

Wilsons Beach

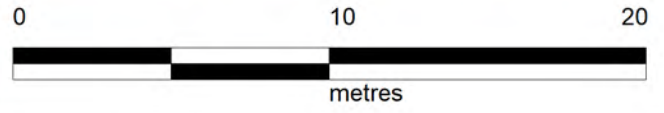


Figure 6: AHIMS sites within the study area and immediate surrounds.





4.3 PREDICTIVE MODEL

Based on the results of previous archaeological investigations within the wider region, a number of predictions regarding Aboriginal use of the area can be made. These predictions focus on the nature, extent and integrity of the remaining evidence.

The landscape characteristics of the area influence the prediction of the nature of potential sites within the landscape itself. Disturbance is the predominant factor determining whether or not artefacts are likely to be identified within a landscape.

Surface sites are likely to have been impacted by pedestrian activity, vegetation clearance, the construction of water drainage and structures within the area over the historic period. Natural actions such as erosion and bioturbation are likely to have also impacted not only the surface, but also at least the upper levels of subsurface archaeological deposits. Whilst these actions may impact the integrity of stratigraphy within the deposit, this does not necessarily mean associated archaeological objects will also be disturbed.

In general, Aboriginal use of an area is based on a number of factors, such as:

- Proximity to permanent water sources – generally permanent or areas of repeat habitation are located within approximately 200m of permanent water;
- Proximity to ephemeral water sources – generally sites near ephemeral water sources were utilised for one-off occupation;
- Ease of travel – ridgelines were often utilised for travel during subsistence activities; and
- The local relief – flatter, more level areas were more likely to be utilised for long term or repeat habitation sites than areas of greater relief, especially if the slopes are at a distance from water.

STONE ARTEFACTS

Stone artefacts can be identified on the ground surface or within subsurface deposits. Generally, artefact concentrations are representative of debris from knapping activities, which includes flakes, flake fragments, cores, and pieces likely to have been knapped but with no or inconclusive diagnostic features, referred to as flaked pieces. Modified artefacts can also be identified, including backed artefacts, scrapers, or edge ground axes, although these are generally a smaller proportion of the artefact assemblage. During excavation, very small debris (~3-5mm) can be identified within sieved material, and is referred to as debitage. This is indicative of *in situ* knapping activities.

As the detection of stone artefacts relies on surface visibility, factors such as vegetation cover can prevent their identification. Conversely, areas of exposure can assist in their identification. Stone artefacts have not previously identified within the



current study. However, they have been identified in other areas within Beecroft Peninsula and there is a possibility they may be present in exposed and/or subsurface areas.

QUARRY AND PROCUREMENT

Exposures of stone which can be exploited for the production of lithics are referred to as quarries or procurement sites. Quarries generally have evidence of extraction visible, while procurement sites can be inferred through the presence of artefactual material made from raw material sources present within the area.

The underlying geology of the study area is sandstone which often contains small conglomerates of rock including quartz pebbles, which was used by Aboriginal people to make implements and weapons. It is unlikely the study area would have been an active quarrying site but pebbles and gravels may be located here.

MIDDENS

Middens are concentrations of shell, and may also contain stone artefacts, bone and sometimes human burials. These sites are generally recorded along coastal areas. Middens are formed through the exploitation of locally available species by humans for resources, and accumulation of the shell material within a specific location. Middens can range in size from small, discrete deposits, to deposits covering a large area.

Generally, middens reflect the species available in the local area. In estuarine regions, estuarine species will dominate the composition of the midden, while around headlands, rock platform species tend to dominate. A midden has been recorded as being within the current study area and others have been recorded within the Beecroft area. As such, it is likely that the area contains midden material, and additional material may be identified.

BURIALS

Aboriginal people across Australia utilised a range of burial forms, which depended on the customs of the individual tribes. Common burial practices included inhumation, cremation, desiccation, and exposure. Burials are known to occur within sandy contexts in the wider region. These are generally found within coastal Holocene sand bodies, and generally are not identified during field survey as there is usually minimal surface expression of this type of site.

To date, there appears to be no records of human burials being identified within the specific study area itself. However, it was noted during the background research for this current project that a number of burials have been found in rockshelters within the Beecroft Peninsula. Human burials and/or remains have also been found in sandy deposits along Currumbene Creek near Huskisson. They have also been found within dune systems and shell middens along the NSW coast. There is some possibility for burials to occur within the study area, although this is considered low.



ROCK SHELTERS

Rock shelters are formed by rock overhangs which would have provided shelter to Aboriginal people in the past. Often, evidence of this occupation can be found in the form of art and/or artefacts. Shell, midden material, grinding grooves, pictographs (rock engravings), artworks including stencils and paintings, and potential archaeological deposits (PAD) are common features of rock shelter sites.

The available mapping of the underlying geology within the study area is sandstone. However, no rockshelters have been recorded within Wilsons Beach itself. It is considered unlikely that this site type will occur with the study area.

GRINDING GROOVES

Grinding grooves are formed on sandstone exposures through the creation and maintenance of ground edge tools, such as axes and spears. Usually, stone was ground to form a sharp edge, although bone and shell were also ground to create sharp points.

Generally, fine grained sandstone was favoured for these maintenance activities, and the presence of a water source nearby or overflowing the sandstone was also favoured. Grinding grooves range from individual examples through to hundreds of grooves within an area, sometimes arranged in a specific pattern. Horizontal sandstone was generally preferred, although there are examples of vertical grooves.

There is outcropping sandstone near the study area, but no grinding grooves have previously been recorded within or near the study area. It is considered unlikely that this site type occurs within the study area.

SCARRED AND CARVED TREES

Scarred and carved trees are created during the removal of bark from a tree for a range of reasons, both domestic and ceremonial. This type of site can be identified within areas containing trees of the correct species and appropriate age. Deliberately scarred trees can be difficult to differentiate from naturally occurring damage to trees, and specific criteria must be considered when assessing a scar for a cultural origin.

No sacred or carved trees have been recorded as being in or within the study area. However there may be some potential for this site type to occur in undisturbed bushland within the Beecroft Peninsula.

CEREMONIAL SITES

Specific places were used for ritual and ceremonial purposes, including initiation and burial practices. Secret rituals were also undertaken at specific places by specific individuals, such as at water holes and by clever men.

The landscape itself was also considered to hold significance to Aboriginal people, and the understanding of this is referred to as a sacred geography. This includes natural features which were associated with spirits or creation beings. The meaning



attributed to the landscape provided Aboriginal people with legitimacy regarding their role as guardians of the places which had been created by the spiritual ancestors (Boot 2002).

Many areas within the South Coast of NSW are considered to be sacred to the original inhabitants. There are no known recorded areas within the study area, although this does not preclude these values from existing within this location.

CONTACT SITES

Contact sites contain evidence of Aboriginal occupation concurrent with initial colonisers in an area. This could include evidence such as flaked artefacts formed on glass, or burials containing non-Aboriginal grave goods. Often Aboriginal camps would form around newly built towns, allowing for employment (or exploitation) of the Aboriginal people by the colonists, and also for trade to exist between the two communities. Contact sites can also occur around Aboriginal mission sites, where Aboriginal children were taken from their families to raise in the European manner. Families often camped around the mission boundaries to try to catch a glimpse of their children.

There is no known evidence of initial contact between Aboriginal people and colonists within the study area.



5.0 FIELD WORK

5.1 SAMPLING STRATEGY

A sampling strategy was developed and provided to the Registered Aboriginal Parties (RAPs) as part of the consultation process completed for the ACHA. The strategy included assessment of all landforms within the study area that have the potential to be impacted by the proposed development. Areas considered likely to have archaeological potential were closely scrutinised, although the entire study area was considered.

The sampling strategy included consideration of the entirety of the study area due to the nature of the development proposal, in order to provide an accurate assessment of the study area in relation to the proposed impacts.

5.2 SITE INSPECTION

A site survey was undertaken on 9 June 2023 by Leigh and Jenni Bate from Apex Archaeology. Jerrinja LALC were invited to participate in the survey but were unable to attend on the day.

5.3 SURVEY COVERAGE

The survey was conducted on foot for the purposes of discovering Aboriginal objects within the study area, including areas considered to have potential for subsurface objects to be present. The survey was undertaken in accordance with the sampling strategy prepared for the project and included the entirety of the study area.

The survey was undertaken with two survey participants for the entire survey track length. Each participant was responsible for inspecting a 2m wide portion of the road section walked. This meant that on each pass an area covering 4m would be observed for archaeological material.

Table 3: Survey units

Unit name	Landform Element	Number of participants	Total Length
ATU 1	Sand Dune	2	20m

During the survey completed by Apex Archaeology the study area was inspected for Aboriginal archaeological evidence. An assessment of landform element and slope was made for the study area, with the results presented in Table 4.

Table 4: Survey unit results

Survey Area #	Landform Element	Slope	Vegetation	Detection Limiting Factors	Ground Disturbance
ATU 1	Sand Dune	Level-very gentle (<1.45°)	Coastal Dune/Cleared	Sediment	Moderate to High



The total survey coverage (meaning the areas physically inspected for archaeological evidence) was approximately 80m². The total area of the development impact is approximately 80m². A range of factors were considered and recorded during the survey, including the surface visibility (percentage of bare ground within a survey unit); archaeological visibility (amount of bare ground within an area in which artefacts could be expected to be identified if present); exposure type (A or B soil horizon) and calculations of the effectiveness of the survey coverage. The results of the survey coverage are presented in Table 5.

Table 5: Survey coverage results

Survey Area #	Total Area Surveyed (m ²)	Surface Visibility (%)	Arch Vis (%)	Exposure Type (A/B)	Effective Coverage (m ²)	% Total Effective Survey Coverage of Context
ATU 1	80	80	50	A	32	40

Surface visibility across the study areas was limited due to surface vegetation such as leaf litter and weeds. Total effective survey coverage of the survey transect was 40%. Total effective survey coverage for the entire study area was 40% (Table 6).

Table 6: Total effective survey coverage results

Survey Area #	Total Area of Study Area (m ²)	Total Area Effectively Surveyed (m ²)	Surface Visibility (%)	Arch Vis (%)	Exposure Type (A/B)	% Effective Survey Coverage of Context (Total Area)
ATU 1	80	80	80	50	A	40

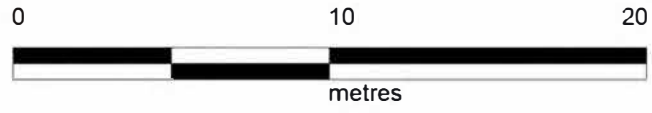


Figure 7: Survey units and survey transect within the study area.



5.4 SURVEY RESULTS

The track leading up to Wilsons Beach and the entry onto Wilsons Beach was the focus of the inspection. The survey noted that Wilsons Beach was an extremely shelly beach, with small shells covering the high tide line and present across much of the exposed sand.

The walking track had been severely eroded due to water action during recent severe rain events, leading to nearly 2m of sand being washed away. A 1-2m high section of the dunes was visible along the beach end of the trail. Shell deposits were visible, including consolidated lenses of shell. No stone artefacts or bone items were identified on the ground surface or within the exposed stratigraphy.

Most of the shells were quite small and fragmentary, which made identification of individual species difficult.



Plate 6: View west along walking track leading to Wilsons Beach.



Plate 7: View west across eroded track leading to Wilsons Beach.



Plate 8: View across staircase towards beach, showing level of erosion present.



Plate 9: Eroded walking track and staircase.



Plate 10: View towards staircase and eroded track.



Plate 11: Exposed stratigraphy adjacent to walking track.

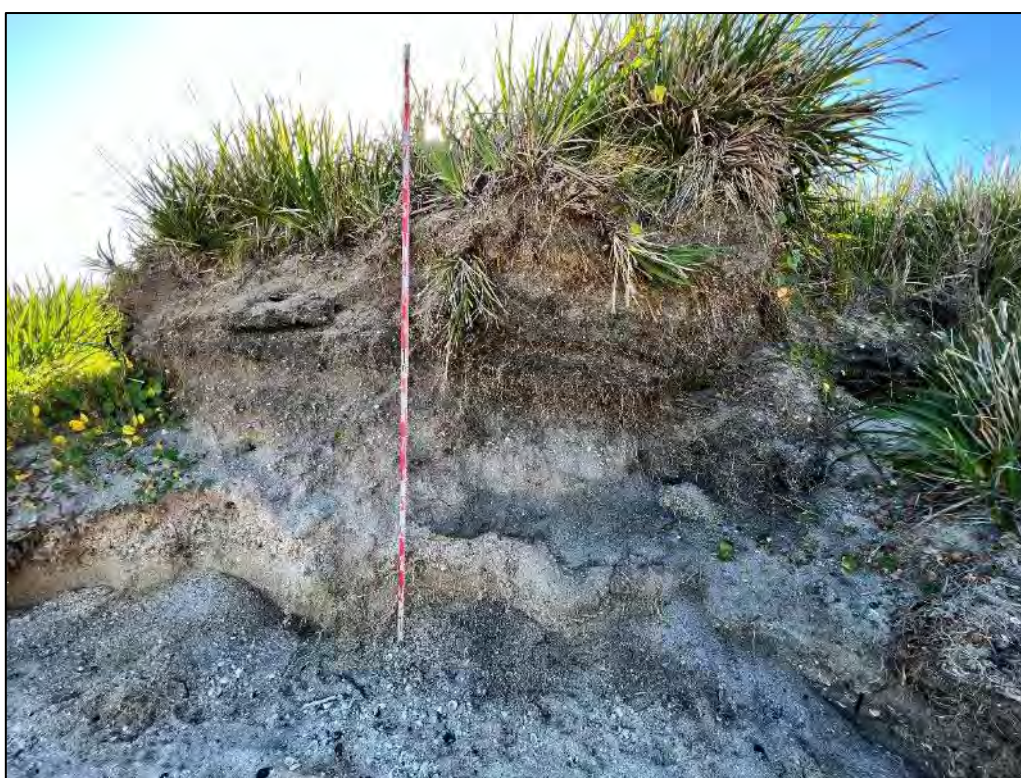


Plate 12: Exposed deposits adjacent to walking track.



Plate 13: Consolidated shell lenses adjacent to walking track.



Plate 14: Example of shell deposits on Wilsons Beach.



Plate 15: Shell deposits on beach.



Plate 16: View towards walking track from Wilsons Beach.



5.5 SURVEY SUMMARY

The shell midden site (AHIMS #58-2-0054) had previously been recorded by Wiley (1977) and Connolly (1980) who both detailed on the site card that the front, sea-facing side, had been subject to erosion and reworked. They also noted that the shells were interspersed with washup. The mussel and turban shell species identified in the first recording however were different from the shellfish species recorded in the later assessment. Additionally, there was no mention of artefacts being found in either of these two previous assessments. However, for some unknown reason, artefacts are listed as site features on the AHIMS extensive report details for the site.

A dense shell deposit was noted across much of the beach frontage, including fragmentary and whole shells of Zebra Snails (*Austrocochlea porcata*), Black Nerites (*Nerita atramentosa*), White Rock Shell (*Dicathis orbita*), and *anadara spp.* Relatively dense shell lenses were visible in exposed stratigraphy alongside the walking track, where water action had eroded the sand dune, but identification of species included within these lenses was difficult due to the small and fragmentary nature of the shell deposits.

The results are consistent with those found in Marjorie Sullivan's 1978 assessment of the site condition of the midden (AHIMS #58-2-0055) at Shell Beach. That site is situated approximately 400 m south of the current study area and is within a similar context. Sullivan also found that the condition of the exposed seaward-facing portion of the shell midden had been clearly and unequivocally reworked, and that this was evident by the considerable amount of shell grit and water-worn shell. Sullivan also concluded that it was not possible to determine if the exposed material derived from the proposed cultural midden or had been washed up naturally from the rock platforms. This was also the case with the current site-survey assessment.

Given the lack of other cultural material such as stone artefacts, faunal remains and/or charcoal deposits, along with the widespread nature of shell deposits along the beach itself, it was difficult to determine the exact boundaries of the registered site within the study area (AHIMS #58-2-0554) as these are not delineated clearly on the site card. It is further difficult to definitely state that the shell deposits constitute a cultural midden. However, given the fact that it has been recorded as a cultural site and registered with AHIMS, and in an abundance of caution, the shell deposits have been considered as a cultural shell midden and appropriate mitigation measures recommended for the site.



6.0 SCIENTIFIC VALUES AND SIGNIFICANCE ASSESSMENT

6.1 INTRODUCTION

The *Aboriginal cultural heritage consultation requirements for proponents 2010* acknowledge that:

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

Undertaking consultation with Aboriginal people ensures that potential harm to Aboriginal objects and places from proposed developments is identified and mitigation measures developed early in the planning process.

6.2 ARCHAEOLOGICAL SIGNIFICANCE

Archaeological or scientific significance relates to the value of archaeological objects or sites as they are able to inform research questions considered important to the archaeological community, which includes Aboriginal people, heritage consultants and academic researchers. The value of this type of significance is determined on how the objects and sites can provide information regarding how people in the past lived their lives. The criteria for archaeological significance assessment generally reflect the criteria of the ICOMOS Burra Charter.

6.3 CRITERIA

Archaeological significance is assessed based on the archaeological or scientific values of an area. These values can be defined as the importance of the area relating to several criteria. Criteria used for determining the archaeological significance of an area are as follows:

- **Research potential:** Can the site contribute to an understanding of the area/region and/or the state's natural and cultural history? Is the site able to provide information that no other site or resource is able to do?
- **Representativeness:** is the site representative of this type of site? Is there variability both inside and outside the study area? Are similar site types conserved?
- **Rarity:** is the subject area a rare site type? Does it contain rare archaeological material or demonstrate cultural activities that no other site can demonstrate? Is this type of site in danger of being lost?
- **Integrity/Intactness:** Has the site been subject to significant disturbance? Is the site likely to contain deposits which may possess intact stratigraphy?



Further, an assessment of the grade of significance is made, based on how well the item fulfils the assessment criteria. The Heritage Branch of the Department of Planning (now Heritage NSW) 2009 guideline *Assessing Significance for Historical Archaeological Sites and 'Relics'* defines the grading of significance as follows:

Table 7: Grading of significance, from Heritage Branch 2009

Grading	Justification
Exceptional	Rare or outstanding item of local or State significance. High degree of intactness. Item can be interpreted relatively easily.
High	High degree of original fabric. Demonstrates a key element of the item's significance. Alterations do not detract from significance.
Moderate	Altered or modified elements. Elements with little heritage value but which contribute to the overall significance of the item.
Little	Alterations detract from significance. Difficult to interpret.
Intrusive	Damaging to the item's heritage significance.

Whilst this was developed for the assessment of significance of historical items, the criteria are applicable to archaeological significance assessments as well. It is important to note that the below assessment is specific to Aboriginal cultural heritage and does not consider the non-Aboriginal significance of the site.

6.4 SIGNIFICANCE ASSESSMENT

RESEARCH POTENTIAL

The study area is highly disturbed and is considered to possess limited research potential, based on the exposed evidence. There may be more intact shell material within subsurface deposits further inland which may have the potential to reveal information about Aboriginal occupation within the Wilsons Beach area, along with other cultural material such as artefacts. However, without undergoing more comprehensive archaeological investigations by the way of archaeological subsurface excavations, it is not possible to determine the extent of the shell midden and to confirm whether it is of cultural origin.

REPRESENTATIVENESS

The site is not considered to be a reliable representation of a midden deposit within the Beecroft Peninsula due to its sparse and fragmentary nature, and lack of other archaeological cultural material. The more intact middens with clear stratigraphic deposits have been found within the rockshelters excavated along Currarong Creek and Abrahams Bosom Creek. These are considered to offer a more detailed and reliable representation of this site type within the Beecroft Peninsula region.



RARITY

The site is not considered to have value under this criterion as it is not a particularly rare site type within the locality.

INTEGRITY/INTACTNESS

The portion of the site assessed within the study area is considered to be highly disturbed, and therefore is not considered to have integrity, nor be intact. However there maybe cultural material in the immediate surrounds that may be intact and have integrity.

6.5 STATEMENT OF ARCHAEOLOGICAL SIGNIFICANCE

Overall, the archaeological significance of the area assessed within the registered site is considered to be low due to heavy disturbance and lack of archaeological evidence. There has been a high level of historical impact from pedestrian activity and the construction of the beach-access stairs and Wreck Walk path. Additionally, there has been ongoing natural erosion from wind and wave activity coming across the beach, as well as fresh water emptying onto the beach from an inland-based drainage line. Further investigation of the shell currently exposed within the sand dune is unlikely to provide additional information or contribute to the assessment of significance of the site.

However, there may be culturally deposited shell midden around, and further inland from the exposed midden bordering the beach. This would require invasive archaeological investigation such as testing the subsurface by excavations to determine this. It is important to note that this would also only provide a sample of what lies beneath the surface. Cultural remains such as human burials may not be found through this method or may be inadvertently disturbed. Even though the portion of the site assessed is considered to be of low archaeological significance, remediation works will protect any cultural remains that may be below or around the assessed area.



7.0 IMPACT ASSESSMENT

7.1 PROPOSED DEVELOPMENT

The study area comprises approximately 20m of the beach access end of Abrahams Bosom Walking Track, and the area around the existing metal staircase which formerly led to the beach. Significant erosion has caused this staircase to be obsolete, and works are required to rectify this area to provide safer access to Wilsons Beach for pedestrians.

As such, it is proposed to remove the existing staircase. This would be achieved through angle grinding the existing metal poles off of the sandstone boulders they are attached to, and then cutting the staircase into manageable pieces to allow removal from site by hand. The sandstone would be retained. Geofabric or similar textile would then be laid along the eroded area, and fill (likely clean sand) would be laid over the top to ensure the safety of the public who may access this area. Sandbags would also be utilised as necessary to prevent further erosion occurring. These works would assist in protecting the shell deposit from any further impact during works and into the future.

Additionally, minor drainage works are likely to be necessary to prevent a recurrence of the severe erosion that occurred during extreme rain events in the Shoalhaven region.

7.2 POTENTIAL IMPACT

The only proposed impact is to allow the rectification works. These works would assist in protecting the shell deposit from further impact, including impact from erosion and pedestrian activity. The area of exposed shell deposit requires rehabilitation in order to prevent further erosion. This will also assist in protecting any potential cultural shell midden behind the exposed area. As such, the only work that should be undertaken is to aid in the rehabilitation and remediation of the area containing the exposed shell.

The proposed works would result in a positive heritage outcome through the protection of the site and prevention of further impact through water actions.



8.0 MANAGEMENT, MITIGATION AND RECOMMENDATIONS

8.1 GUIDING PRINCIPLES

Wherever possible and practicable, it is preferred to avoid impact to Aboriginal archaeological sites. In situations where conservation is not possible or practicable, mitigation measures must be implemented.

The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance, 2013 (The Burra Charter) provides guidance for the management of culturally sensitive places. The Burra Charter is predominantly focussed on places of built heritage significance, but the principles are applicable to other places of significance as well.

The first guiding principle for management of culturally significant sites states that “places of cultural significance should be conserved” (Article 2.1). A cautious approach should be adopted, whereby only “as much as necessary but as little as possible” (Article 3.1) should be changed or impacted.

Mitigation measures depend on the significance assessment for the site. Cultural significance of sites should also be considered in consultation with the Aboriginal community during community consultation.

8.2 HARM AVOIDANCE OR MITIGATION

One previously identified shell midden site is registered within the current study area (AHIMS #58-2-0054). The previous assessments of the site in 1977 and 1980 both noted that it had been subjected to erosion and the visible shell deposit had been reworked and impacted by washout. Neither of these assessments, nor the current assessment, identified other Aboriginal cultural material often associated with Aboriginal shell middens. However, there is still potential for the shell to have accumulated through the action of Aboriginal people, and this cannot be discounted. Additionally, there may be artefactual material and evidence of site use by Aboriginal people behind the exposed shell midden that potentially extends further inland.

Despite the lack of evidence supporting the definitive Aboriginal origin of the shell deposit, through application of the precautionary principle, it is proposed to avoid further impact to the shell deposit and retain it *in situ* through rehabilitation of the area containing the shell deposit. This is considered prudent to avoid further harm to the deposit and protect other potential shell midden and cultural deposits that may be present beyond the exposed areas.

As the shell deposit is a registered Aboriginal site, an application for an Aboriginal Heritage Impact Permit (AHIP) under Section 90 of the *National Parks and Wildlife Act 1974* will be necessary to permit the rehabilitation works required within this area.



Consultation with the Aboriginal community has been undertaken for this project in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010*. The Aboriginal community have been afforded an opportunity to provide feedback regarding the proposed development and its potential impact on Aboriginal cultural heritage, and their views have been incorporated into the final ACHA wherever possible.

Given the low scientific significance of the site, along with the proposal to retain the shell deposit *in situ* and the fact that no further impact is proposed along the northern boundary of the site, further mitigation measures beyond remediation works as outlined in Section 7.1 are not considered warranted or necessary.

No impact beyond that described in this report should occur within this area.



9.0 PERMIT REQUIREMENTS

9.1 PERMIT AREA

An application for an AHIP under Part 6 of the *National Parks and Wildlife Act 1974* is required for the access track to Wilsons Beach, prior to the commencement of proposed remediation works. A shape file has been included in the AHIP application for the study area, and Figure 8 shows the proposed AHIP boundary.

The proposed AHIP boundary includes the extent of the study area, which comprises an approximate 20m length of the access track, and an approximate 5 x 5m area accessing the beach.

9.2 PERMIT TYPE

This permit application is for remediation works to occur at Wilsons Beach and is within part of Lot 7004 DP1030104. No additional impact in the form of salvage or other archaeological work is recommended.

9.3 AHIMS NUMBERS

The following AHIMS site falls within the study area and would be impacted by the proposed remediation works:

- 58-2-0054 - an area of exposed shell at the end of the access track to Wilsons Beach, that is also at the northwest end of Abrahams Bosom Walking Track.

9.4 PREVIOUS AHIPS

To the best of our knowledge, no other AHIPs have been issued or refused within the specific study area.

9.5 RESTRICTED INFORMATION AND CONFIDENTIALITY

Aboriginal stakeholders for the project have not identified any restricted, confidential or culturally sensitive information related to the project and this AHIP application.

9.6 COPYRIGHT

Apex Archaeology asserts its Moral Rights in this work, unless otherwise indicated, in accordance with the Commonwealth *Copyright (Moral Rights) Amendment Act 2000*. Apex Archaeology vests copyright in all material produced in this report by Apex Archaeology (excluding pre-existing material), in Crown Lands and retains the right to use all the material produced by Apex Archaeology for our ongoing business and professional activities (including but not limited to professional presentations, academic papers and/or publications).



AHIP_BP	Easting	Northing
1	302,358.12	6,124,380.73
2	302,357.21	6,124,384.14
3	302,359.37	6,124,385.39
4	302,384.07	6,124,377.93
5	302,384.99	6,124,374.52
6	302,382.09	6,124,373.38

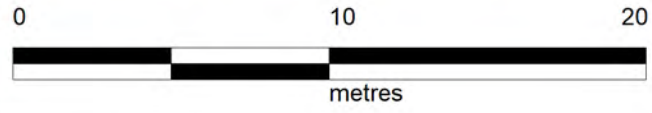


Figure 8: AHIP boundary for study area.





10.0 RECOMMENDATIONS

The following recommendations are made on the basis of:

- The statutory requirements of the NP&W Act 1974;
- The requirements of Heritage NSW;
- The results of the cultural and archaeological assessment;
- An assessment of the likely impacts of the proposed development; and
- The interests of the registered Aboriginal stakeholders and the cultural heritage record.

It was found that:

- There was one previously identified Aboriginal site located within the study area (AHIMS #58-2-0054).
- The study area was considered to be highly disturbed by natural impacts.
- The only work required within the study area is the rectification of the exposed area of shell deposit within part of Lot 7004 DP1030104.
- Detailed assessment of the exposed section of shell deposit was unable to definitively conclude it was Aboriginal in origin.
- Despite the inconclusive assessment of the origin of the shell deposit, it is registered as an Aboriginal shell midden and as such, an Aboriginal Heritage Impact Permit (AHIP) is required to permit rectification works to the exposed section of shell deposit.

The following recommendations have been made.

RECOMMENDATION 1: APPLICATION FOR AHIP REQUIRED

An application should be made to Heritage NSW for an AHIP to permit rectification works to occur in the vicinity of the exposed shell deposit, AHIMS site #58-2-0054. This area should be covered with geofabric or similar textile, and covered with fill (clean sand or similar) to ensure no further impact occurs to this location. Sandbags should be placed on top of geofabric in areas requiring significant remediation to ensure stabilisation of the area. Minor drainage works are also necessary to direct water flow away from the access track and prevent further washout occurring. The AHIP boundary should encompass the area delineated on Figure 8 of this report.

RECOMMENDATION 2: MAINTAIN ABORIGINAL COMMUNITY CONSULTATION

Consultation with the RAPs regarding the project should continue, in order to keep the RAPs informed about the management of Aboriginal cultural heritage within the study area. This includes notifying the RAPs when an AHIP application is lodged, and also in the event an AHIP is issued.

Consultation undertaken for this project must be maintained at least every six months in order to maintain validity. It is the Proponent's responsibility to ensure consultation remains valid. In the event a gap of more than six months occurs



between consultation events, it may be necessary to restart the consultation process to support any AHIP applications that are necessary.

RECOMMENDATION 3: WORKS BOUNDARIES

The proposed remediation works must be contained within the assessed boundary for this project. If there is any alteration to the boundary of the proposed remediation works to include additional areas not assessed as part of this archaeological investigation, further investigation of those areas should be completed to assist in managing Aboriginal objects and places which may be present in an appropriate manner.

RECOMMENDATION 4: STOP WORK PROVISION

Should unanticipated Aboriginal archaeological material be encountered during site works, all work must cease in the vicinity of the find and an archaeologist contacted to make an assessment of the find and to advise on the course of action to be taken. Further archaeological assessment and Aboriginal community consultation may be required prior to the recommencement of works. Any objects confirmed to be Aboriginal in origin must be reported to Heritage NSW.

Human remains of Aboriginal people have previously been recorded in shell middens within rockshelters within Beecroft Peninsula, and within sand dune deposits in Jervis Bay. In the unlikely event that suspected human remains are identified during rectification works, all activity in the vicinity of the find must cease immediately and the find protected from harm or damage. The NSW Police and the Coroner's Office must be notified immediately. If the finds are confirmed to be human and of Aboriginal origin, further assessment by an archaeologist experienced in the assessment of human remains and consultation with both Heritage NSW and the RAPs for the project would be necessary.

RECOMMENDATION 5: REPORTING

One digital copy of this report should be forwarded to Heritage NSW to support the required AHIP application for the project, along with required supporting documentation.

One digital copy of this report should be forwarded to Heritage NSW for inclusion on the Aboriginal Heritage Information Management System (AHIMS).

One copy of this report should be forwarded to each of the registered Aboriginal stakeholders for the project.



11.0 BIBLIOGRAPHY

AMBS, 2010. *Currarong Sewerage Scheme Archaeological Excavation Scheme*. Report to NSW Department of Commerce.

Attenbrow, V. 2010, *Sydney's Aboriginal Past: Investigating the archaeological and historical records*. UNSW Press, Sydney (Second Edition).

Attenbrow, V., Corkill, T., Pogson, R., Sutherland, L., Grave, P. 2017, 'Non-destructive Provenancing of Ground-Edged Mafic Artifacts: A Holocene Case Study from the Sydney Basin, Australia'. *Journal of Field Archaeology* 42(3): 173-186.

Apex Archaeology. 2018, *Vermont Estate Central Precinct Stage 3: Archaeological Technical Report*. Report to Johnson Property Group.

Apex Archaeology, 2021, *The Pavilion' Development, Huskisson, NSW. Aboriginal Cultural Heritage Assessment Report*. Report to Kamsley Pty Ltd.

Biosis. 2020, *Halloran Trust Lands, Callala Bay: Archaeological Report*. Report to Shoalhaven City Council.

Boot, P. 2002, *Didthul, Bhundoo, Gulaga and Wadbilliga: An Archaeological Study of the Aboriginals of the New South Wales South Coast Hinterland*. Thesis submitted for the degree of Doctor of Philosophy of the Australian National University.

Bowdler, S. 1970, *Bass Point: The Excavation of a South East Australian Shell Midden Showing Cultural and Economic Change*. Unpublished BA (Hons) Thesis, University of Sydney, Sydney.

Bowdler, S. 1976 Hook, Line and Dilly Bag: An Interpretation of an Australian Coastal Shell Midden. *Mankind*, Vol.10 pp.248-58.

Bowdler, JM., Johnston, H., Olley JM., Prescott, JR., Roberts, RG., Shawcross, W and Spooner, N. 2003, 'New ages for human occupation and climactic change at Lake Mungo, Australia.' *Nature* Vol 421:30, pp.837-840.

Corkill, T. 2005, "Sourcing Stone from the Sydney Region: A Hatchet Job." *Australian Archaeology* 60: 41-50.

Clarkson, C., Smith, M., Marwick, B., Fullagar, R., Wallis, L., Faulkner, P., Manne, T., Hayes, E., Roberts, R., Jacobs, Z., Carah, X., Lowe, K., Matthews, J and Florin, S. 2015, The archaeology, chronology and stratigraphy of Madjedbebe (Malakunanja II): A site in northern Australia with early occupation. *Journal of Human Evolution*. 83:46-64

DECCW. 2010a, *Aboriginal cultural heritage consultation requirements for proponents 2010*. DECCW, Sydney South.



DECCW. 2010b, *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*. DECCW, Sydney South.

DECCW. 2010c, *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*. DECCW, Sydney South.

Dawson, J. 1881. *Australian Aborigines. The languages and customs of several tribes of Aborigines in the western district of Victoria Australia*. George Robertson, Melbourne.

Donlon, D. 1996, *Aboriginal skeletal remains from Currambene Creek, on the South Coast of New South Wales*. Report to NSW National Parks and Wildlife Service, Nowra.

Eades, D.K. 1976, *The Dharawal and Dhurga Languages of the NSW South Coast*, Australian institute of Aboriginal Studies, ANU, Canberra.

Feary, S. 2012, *Investigation of a Possible Aboriginal Site at the Huskisson Hotel, Jervis Bay, New South Wales*. Report to Steve Bartlett, Kamsley Pty Ltd.

Feary, S. 2014, *Archaeological investigation for a proposed shared path at Orion Beach, Vincentia, New South Wales, Shoalhaven Local Government Area. Aboriginal cultural heritage assessment report*. Report to Shoalhaven City Council.

Feary, S. 2016, *Proposed shared path across Moona Moona Creek, Huskisson, NSW. Aboriginal cultural heritage due diligence assessment*. Report to Shoalhaven City Council.

Feary, S. 2018, *Proposed sale and redevelopment of Anglican Church grounds, Huskisson. Aboriginal cultural heritage due diligence assessment*. Report to Bartlett and Associates Pty Ltd

Fitzhardinge, L. F. 1979, *Sydney's First Four Years, A Narrative of the Expedition to Botany Bay and a Complete Account of the settlement of Port Jackson 1788 – 1791 by Captain Watkin Tench of the Marines*. Library of Australian History: Sydney.

Grant, J. 1801, Extract from Ships journal in letter from Governor King to Duke of Portland. In *Historical Records of New South Wales*, Vol IV, Hunter and King 1800, 1801, 1802. Charles Potter, Government Printer, Facsimile Edition 1976.

Heritage Branch Department of Planning. 2009, *Assessing Significance for Historical Archaeological Sites and 'Relics'*. Heritage Council of NSW, Sydney.

Howitt, AW. 1904, *The Native Tribes of South-East Australia*. Macentimetresillan & Co. London.

Hughes, P & R Lampert. 1982, Prehistorical population changes in southern coastal New South Wales. In S. Bowdler (ed) *Coastal Archaeology in Eastern Australia: Proceedings of the 1980 Valla Conference on Australian Prehistory*. Pp 16-28.



Occasional Papers in Prehistory 11. Department of Prehistory Research School of Pacific Studies, Australian National University, Canberra.

Jervis Bay Maritime Museum. 2023. The Amazing story of the Grass Tree. Available at <http://jervisbaymaritimemuseum.blogspot.com/2016/11/grass-tree-xanthorrhoea.html> . (Accessed 5 June 2023)

JMcD CHM. 2005, *Archaeological salvage excavation of site RTA-G1 109-113 George Street Parramatta*. Unpublished report to Landcom Pty Ltd.

Kelleher Nightingale Consulting. 2020, *Nowra Bridge Project Boundary Adjustments: Aboriginal Heritage Due Diligence Assessment*. Report to Transport NSW.

Kelleher Nightingale Consulting. 2020, *Nowra Bridge Project: Aboriginal Archaeological Salvage Excavation, Aboriginal Heritage Impact Permit #C000574*. Report to Fulton Hogan.

Kuskie, P. *Proposed Mixed Use Subdivision at West Culburra, Shoalhaven City, South Coast of New South Wales: Aboriginal Cultural Heritage Assessment*. Report to Realty Realizations Pty Limited.

Kuskie, P. and Kamminga, J. 2000 *Salvage of Aboriginal archaeological sites in relation to the F3 Freeway near Lenaghans Drive, Black Hill, New South Wales*. Unpublished report by Southeast Archaeology to Northern Region, Roads and Traffic Authority.

Kuskie, P. South East Archaeology, 2008. *An Aboriginal Heritage Impact Assessment of a Proposed Ethanol Plant Upgrade at Shoalhaven Starches, Bomaderry, South Coast of New South Wales*. Report to Manildra Group.

Kohen, JL., Stockton, ED., and Williams, MAJ. 1984, 'Shaws Creek KII rockshelter: a prehistoric occupation site in the Blue Mountains piedmont, eastern New South Wales'. *Archaeology in Oceania* 19(2):57-73.

Lampert, RJ. 1971, Coastal Aborigines of Southeastern Australia. In DJ Mulvaney and J Golson (Eds), *Aboriginal Man and Environment in Australia*. Pp 114-132. Australian National University Press, Canberra.

Lampert, R.J. Brurrill Lake and Currorong. *Terra Australis* 1. Department of Prehistory Research School of Pacific Studies, The Australian national University.

Mary Dallas Consulting Archaeologists. 2013, *Aboriginal Cultural Heritage Assessment Report for Lot 102 DP755928, 2 Murdoch Street Residential Development Huskisson, NSW*. Report to Skyton Developments NSW Pty Ltd

McDonald J. 2005, *Archaeological Salvage Excavation of Eight Archaeological Landscapes in the Second Ponds Creek Valley Rouse Hill Development Area, NSW*. Unpublished report to Rouse Hill Infrastructure Pty Ltd and Landcom.



McDonald, J. 2008, *Dreamtime Superhighway: An analysis of Sydney Basin rock art and prehistoric information exchange*. Terra Australis. Australian National University E Press, Canberra.

Mills, K. 2022. Beecroft Peninsula and Beecroft Weapons Range. *An Introduction to Beecroft Peninsula*. Available at <https://resources.austplants.com.au/wp-content/uploads/INTRODUCTION-TO-BEECROFT-PENINSULA.pdf> (Accessed 15/06/2023).

Mulvaney, J & Kamminga, J. 1999, *Prehistory of Australia*. Allen & Unwin, Crows Nest.

Naval Historical Society of Australia, 2023. Naval Historical Society of Australia. Available at <https://navyhistory.au/naval-heritage-sites/beecroft-peninsula-nsw/>. (Accessed on the 7 June 2023)/

Navin, K. 1991, *Archaeological Investigation of Proposed Currumbene Creek Crossing and Associated Road Routes from Woollamia to Callala Beach, Jervis Bay, NSW*. Report to Mitchell McCotter & Associates Pty Ltd.

Navin Officer, 1992. *Archaeological Investigation: APPM Nowra, Shoalhaven River, NSW*.

Navin Officer Heritage Consultants. 2000, *Moona Moona Creek Reclaimed Water Pipeline Crossing, Huskisson, NSW*. Report to Connell Wagner Pty Ltd.

National Heritage Consultants. 2019, *Aboriginal Heritage Assessment 104 Burrill St, Huskisson, NSW (Lots 81 & 104, DP755928) (Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales)*. Report to PDC Lawyers & Planners on behalf of Kingfisher Projects Pty Ltd.

New South Wales Archaeology (Dibden). 2018, *Aboriginal Archaeological Study for Moss vale Road North (MRVN) Urban Release Area*. Report to Allen Price & Scarratts Pty Ltd.

Nicol, G & Sewell, J. 1793, *A Complete Account of the Settlement at Port Jackson in New South Wales, Including An Accurate Description of the Situation of the Colony; of the Natives; and Of Its Natural Productions*. London.

O'Connell, J.F and Allen, J. 2004. Dating the colonization of Sahul (Pleistocene Australia-New Guinea): a review of recent research. *Journal of Archaeological Science* 31:835-853.

OEH 2011. *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW*. OEH, Sydney South.

Robert Paton Archaeological Studies Pty Ltd. 1993, *An Archaeological Survey of the Banks of Currumbene Creek at Myola Village Near Jervis Bay, NSW*. Report to Patterson Britton and Partners Pty Ltd.



Paton, R. and Macfalane, I. 1989. *An Excavation of Abrahams Bosom Rockshelter 1 near Currarong, Jervis Bay, New South Wales*. Report to NSW National Parks and Wildlife Service and the NSW Department of Lands.

Penfold, H. 2017. *Indigenous Geographies of Home at Orient Point, NSW*. University of Wollongong.

Perry, T.M. 1966, 'Berry, Alexander (1781-1873)', *Australian Dictionary of Biography*. National Centre of Biography, Australian National University. Available from <https://adb.anu.edu.au/biography/berry-alexander-1773>

Smith, MA. 2013, *The Archaeology of Australia's Deserts*. Cambridge University Press, New York.

Stockton, ED. 1973. 'Shaws Creek Shelter: Human Displacement of Artefacts and its significance.' *Mankind* 9: 112-117

Stockton, ED. & Holland, WN. 1974. 'Cultural sites and their environment in the Blue Mountains.' *Archaeology and Physical Anthropology in Oceania*. 9:36-65

Sullivan, M.E. 1979. *An Assessment of the Aboriginal Shell Midden at Whale Point, Currarong*. Report to the Shoalhaven City Council and the National Parks and Wildlife Service of New South Wales.

Tindale, N.B. 1974, *Aboriginal Tribes of Australia – Their Terrain, Environmental Controls, Distribution, Limits and Proper Names*. Online resource, accessed from <http://archives.samuseum.sa.gov.au/tribalmmap/index.html>

Wellington, R. 2002, *Enhancement of Bushfire Protection Area Adjacent to Callala Street Residences, at Huskisson, NSW Jervis Bay National Park*. NPWS internal report.



APPENDIX A: AHIMS SEARCHES

Apex Archaeology
PO BOX 236
Nowra New South Wales 2541
Attention: Leigh Bate

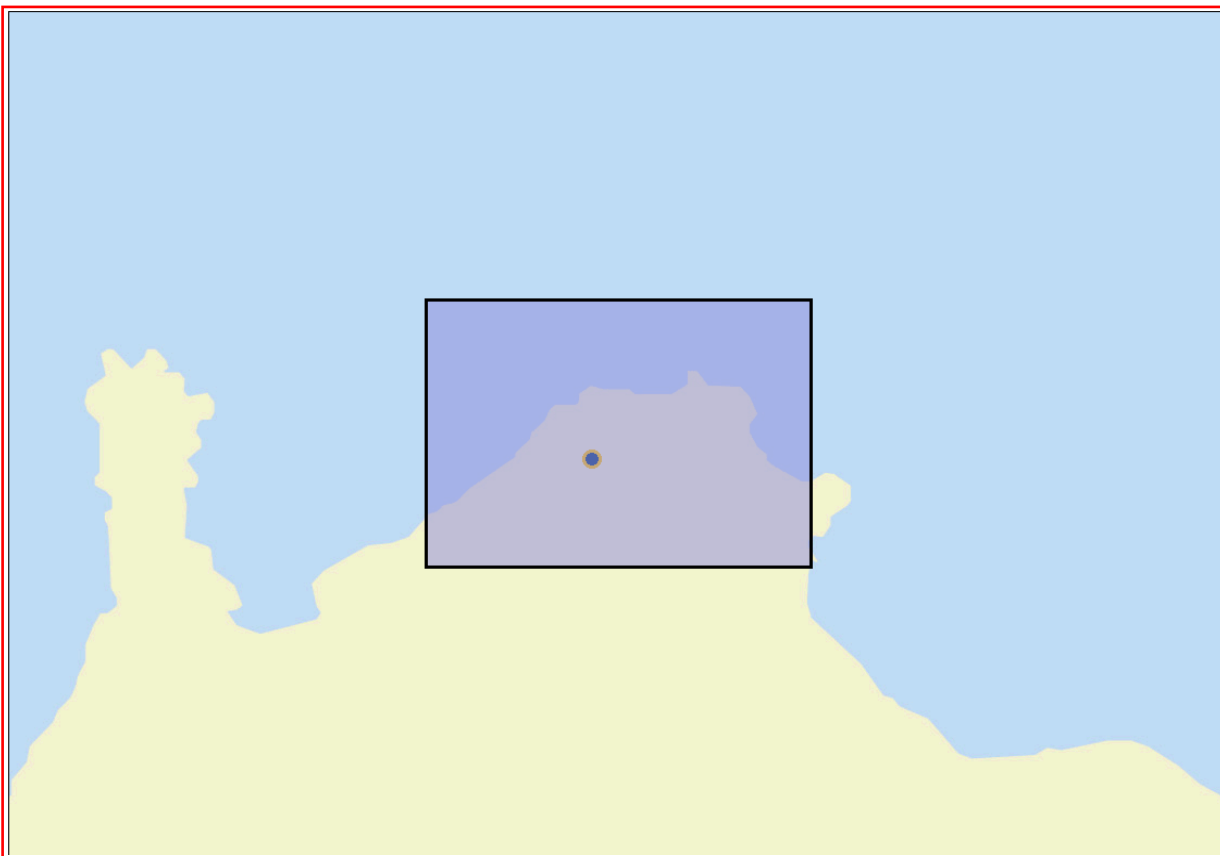
Date: 21 November 2022

Email: leigh@apexarchaeology.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lat, Long From : -35.0047, 150.8325 - Lat, Long To : -35.0025, 150.8363, conducted by Leigh Bate on 21 November 2022.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

1	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the [NSW Government Gazette \(https://www.legislation.nsw.gov.au/gazette\)](https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not to be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.



AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 22200

Client Service ID : 790065

<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>
58-2-0054	Crookhaven Bight;Honeysuckle Point; <u>Contact</u>	AGD	56	302250	6124200	Open site	Valid	Shell : -, Artefact : -	Midden	
		<u>Recorders</u>	S Wiley					<u>Permits</u>		

**** Site Status**

Valid - The site has been recorded and accepted onto the system as valid

Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.

Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground

Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 09/06/2023 for Jenni Bate for the following area at Lat, Long From : -35.0047, 150.8325 - Lat, Long To : -35.0025, 150.8363. Number of Aboriginal sites and Aboriginal objects found is 1

This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Appendix 3. Assessments of Significance

1.State – Biodiversity Conservation Act 2016

By the completion of the investigation three threatened fauna species listed under this Act were recorded:

- White-bellied Sea-eagle (*Haliaeetus leucogaster*) – Vulnerable
- Sooty Oystercatcher (*Haematopus fuliginosus*) - Vulnerable
- Eastern Bristlebird – southern subspecies (*Dasyornis brachypterus brachypterus*) – Endangered

1.1 White-bellied Sea-eagle

(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

The White-bellied Sea-eagle was observed flying near Wilsons Beach (E 302030, N 6124252). No nests typical of this species were observed within the study area. This species is unlikely to be roosting within the proposed activity area and, given the predominantly modified character of the access track, is not expected to utilise the area investigated for its foraging purposes.

(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction

Not applicable to fauna.

(c) in relation to the habitat of a threatened species, population or ecological community:

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity,

The proposal would not result in the modification or removal of native vegetation. The proposed activity would result in minimal ground disturbance with the emplacement of geotextile fabric and the sandbags.

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity,

As no native vegetation removal will be undertaken, the proposed activity is not expected to result in the disturbance to this species' dispersal or movement patterns. Suitable habitat for this species would be retained within the surrounding locality. As such, the proposal would not cause any further fragmentation of, or isolation to, any areas of habitat used by the White-bellied Sea-eagle.

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long term survival of the species, population or ecological community in the locality,

Given the disturbed/modified character of the study area, being the eroded access track popularly used by visitors, it is not expected that the White-bellied Sea-eagle will utilise the area investigated for foraging purposes. This species is more likely to forage within less disturbed areas of the oceanic environment; as such, given that no major components of this species' habitat are to be isolated or fragmented, it is not considered that the proposal will have an impact on the White-bellied Sea-eagle such that the long-term survival of this species in the locality will be adversely affected.

(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),

No declared AOBV would be directly or indirectly affected by the proposal. The project site is not listed as a declared AOBV under Part 3 of the NSW Biodiversity Conservation Regulation 2017.

(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process

Currently 37 KTP for mainland NSW are listed under Schedule 4 of the BC Act. As no native vegetation would be removed, the 'clearing of native vegetation' KTP is not relevant. The proposed activity has the potential to introduce *Phytophthora cinnamomic*; a pathogen that lives in soils and plant roots and is the key organism associated with the dieback of native plant species in Australia. Work must therefore avoid the potential spread of this organism as far as possible. Contractors and personnel will need to adhere to the following hygiene protocols:

- Before entering and leaving the work site, workers are to remove excess soil and mud and then spray boots, tools, gloves and small equipment with recommended disinfectant supplied by the contractor (70% Methylated spirits / 30% Water) until runoff is clear.
- Avoid unnecessary soil disturbance.
- Ensure clean sand is used within the sandbags

Provided the recommended mitigation measures are adopted, the proposal is not considered to significantly contribute to, or increase the impact of, these KTP such that the lifecycle requirements of the White-bellied Sea-eagle would be compromised.

Expected impact on the White-bellied Sea-eagle

The carrying out of the proposal would not disturb, remove, modify or fragment any habitats critical to the lifecycle requirements of the White-bellied Sea-eagle. It is not considered that the proposal would have a significant impact on this threatened species, its population or habitat. As such, the preparation of a SIS [or BDAR should Crown Lands elect that option] that further considers the impact of the proposal on the White-bellied Sea-eagle is not required.

1.2 Sooty Oystercatcher

(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life-cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

One Sooty Oystercatcher individual was observed on a rocky shelf about 40 m north east of the study area.

The Sooty Oystercatcher is found around the entire Australian coast and favours rocky headlands, rocky shelves, exposed reefs with rock pools, beaches and muddy estuaries; where it forages on exposed rock or coral at low tide for marine invertebrates (NSW Scientific Committee 2008, OEH 2023). The Sooty Oystercatcher breeds in spring and summer, almost exclusively on offshore islands (OEH 2023). Nests are a shallow scrape on the ground, or small mounds of pebbles, shells or seaweed when nesting among rocks (OEH 2023). Nests and chicks are vulnerable to human disturbance and dogs (NSW Scientific Committee 2008).

The species are unlikely to be roosting within the proposed study area as the access track is used extensively by beach visitors, especially during spring and summer months. Given the predominantly disturbed/modified character of the study area, and that it is not located within the intertidal zone, species are not expected to utilise the project site for foraging purposes. Given the extent of better and less disturbed habitat within the surrounding area, the proposed work is not considered to adversely affect a viable local population of the Sooty Oystercatcher such that the species are likely to be placed at risk of extinction.

(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

Not applicable to fauna.

(c) in relation to the habitat of a threatened species or ecological community:

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity,

Proposed track remediation would result in minimal ground disturbance with the emplacement of geotextile fabric and the sandbags. This would occur on a severely eroded and heavily used environment. The proposal would not result in the modification or removal of native vegetation. Suitable habitat will be retained in the surrounding area ensuring no long-term loss of breeding, roosting and foraging opportunities for these species.

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity,

The work would not cause any fragmentation of, or isolation to, any areas of habitat used by the Sooty Oystercatcher. Suitable habitat exists for this species beyond the limits of the proposed activity area.

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long term survival of the species or ecological community in the locality,

Given the disturbed/modified character of the study area, being the eroded access track popularly used by visitors, it is not expected that the Sooty Oystercatcher will utilise the area investigated for foraging purposes. This species is more likely to forage within less disturbed areas of the oceanic environment, namely the rocky environment nearby; as such, given that no major components of this species' habitat are to be isolated or fragmented, it is not considered that the proposal will have an impact on the Sooty Oystercatcher such that the long-term survival of this species in the locality will be adversely affected.

(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),

No declared AOBV will be directly or indirectly affected by the proposal. The project site is not listed as a declared AOBV under Part 3 of the BC Regulation 2017.

(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

Currently 37 KTP for mainland NSW are listed under Schedule 4 of the BC Act. As no native vegetation would be removed, the 'clearing of native vegetation' KTP is not relevant. The proposed activity has the potential to introduce *Phytophthora cinnamomic*; a pathogen that lives in soils and plant roots and is the key organism associated with the dieback of native plant species in Australia. Work must therefore avoid the potential spread of this organism as far as possible. Contractors and personnel will need to adhere to the following hygiene protocols:

- Before entering and leaving the work site, workers are to remove excess soil and mud and then spray boots, tools, gloves and small equipment with recommended disinfectant supplied by the contractor (70% Methylated spirits / 30% Water) until runoff is clear.
- Avoid unnecessary soil disturbance.
- Ensure clean sand is used within the sandbags

Provided the recommended mitigation measures are adopted, the proposal is not considered to significantly contribute to, or increase the impact of, these KTP such that the lifecycle requirements of the Sooty Oystercatcher would be compromised.

Expected impact on the Sooty Oystercatcher

The proposed activity is not considered to have a significant impact on the local status of the Sooty Oystercatcher. Therefore, it is not considered that the proposed activity would have a significant impact on these threatened species or their habitat; as such, the preparation of a Species Impact Statement that further considers the impact of the proposal on the Sooty Oystercatchers is not required.

1.3 Eastern Bristlebird – southern subspecies

(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life-cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

One Eastern Bristlebird individual was observed near Wilsons Beach (E 302037, N 6123944). No nests typical of this species were observed within the study area. This species is unlikely to be roosting within the proposed activity area and, given the predominantly modified character of the access track, is not expected to utilise the area investigated for its foraging purposes.

The Eastern Bristlebird has a limited ability to fly long-range, and has three disjunct, localised coastal populations, one being on the Illawarra and Jervis Bay. The species occupies a broad range of coastal vegetation types with a variety of species compositions, including grassland, sedgeland, heathland, swampland, scrubland, grassy sclerophyll forest and woodland, and rainforest (OEH 2012). The species typically feeds on insects, seeds and small fruits on the ground or understorey vegetation (OEH 2012). The Eastern Bristlebird breeds from August to February, typically within low dense vegetation, in grass tussocks, sedges, ferns and shrubs (OEH 2012).

The species are unlikely to be roosting within the proposed study area as the access track is used extensively by beach visitors, especially during spring and summer months. Given the predominantly disturbed/modified character of the study area, and that there is limited dense vegetation present on the

access track, species are not expected to utilise the project site for foraging purposes. Given the extent of better and less disturbed habitat within the study area and surrounding area, the proposed work is not considered to adversely affect a viable local population of the Eastern Bristlebird such that the species are likely to be placed at risk of extinction.

(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

Not applicable to fauna.

(c) in relation to the habitat of a threatened species or ecological community:

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity,

Proposed track remediation would result in minimal ground disturbance with the emplacement of geotextile fabric and the sandbags. This would occur on a severely eroded and heavily used environment. The proposal would not result in the modification or removal of native vegetation. Suitable habitat will be retained in the surrounding area ensuring no long-term loss of breeding, roosting and foraging opportunities for these species.

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity,

The work would not cause any fragmentation of, or isolation to, any areas of habitat used by the Eastern Bristlebird. Suitable habitat exists for this species beyond the limits of the proposed activity area.

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long term survival of the species or ecological community in the locality,

Given the disturbed/modified character of the study area, being the eroded access track popularly used by visitors, it is not expected that the Eastern Bristlebird will utilise the area investigated for foraging purposes. This species is more likely to forage within less disturbed areas of the environment, namely the dense vegetation nearby; as such, given that no major components of this species' habitat are to be isolated or fragmented, it is not considered that the proposal will have an impact on the Eastern Bristlebird such that the long-term survival of this species in the locality will be adversely affected.

(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),

No declared AOBV will be directly or indirectly affected by the proposal. The project site is not listed as a declared AOBV under Part 3 of the BC Regulation 2017.

(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

Currently 37 KTP for mainland NSW are listed under Schedule 4 of the BC Act. As no native vegetation would be removed, the 'clearing of native vegetation' KTP is not relevant. The proposed activity has the potential to introduce *Phytophthora cinnamomic*; a pathogen that lives in soils and plant roots and is the key organism associated with the dieback of native plant species in Australia. Work must therefore avoid the potential spread of this organism as far as possible. Contractors and personnel will need to adhere to the following hygiene protocols:

- Before entering and leaving the work site, workers are to remove excess soil and mud and then spray boots, tools, gloves and small equipment with recommended disinfectant supplied by the contractor (70% Methylated spirits / 30% Water) until runoff is clear.
- Avoid unnecessary soil disturbance.
- Ensure clean sand is used within the sandbags

Provided the recommended mitigation measures are adopted, the proposal is not considered to significantly contribute to, or increase the impact of, these KTP such that the lifecycle requirements of the Eastern Bristlebird would be compromised.

Expected impact on the Eastern Bristlebird – southern subspecies

The proposed activity is not considered to have a significant impact on the local status of the Eastern Bristlebird – southern subspecies. Therefore, it is not considered that the proposed activity would have a significant impact on these threatened species or their habitat; as such, the preparation of a Species Impact Statement that further considers the impact of the proposal on the Eastern Bristlebird is not required.

2. Commonwealth - Species listed under the Environment Protection and Biodiversity Conservation Act 1999

By the completion of the field investigation, the following MNES had been recorded within or near to the area investigated, or were considered to have the potential to occur as suitable habitat is present:

- Eastern Bristlebird – southern subspecies (*Dasyornis brachypterus brachypterus*) - Endangered

The Significant Impact Guidelines prepared under the EPBC Act (DE 2013) are used to determine whether there is likely to be a significant impact on these MNES and as such whether the conducting of the proposal would require referral to the Federal Minister for the Environment for further consideration or approval.

2.1. Eastern Bristlebird – southern subspecies

With reference to the EPBC Act Significant Impact Guidelines that are relevant to an endangered species, an action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:

- *lead to a long-term decrease in the size of a population.*

The remediation of the exposed Aboriginal shell midden through emplacement of sandbags on the beach access track will not cause a long-term decrease in the size of the local Eastern Bristlebird population. The works proposed will not affect any habitat or vegetation utilised or relied upon by this species.

- *reduce the area of occupancy of the species.*

The work will not require any native vegetation removal. Post-work, the site would reflect its current condition. The works will not affect any habitat used by this species such that it would reduce the area of occupancy of the Eastern Bristlebird.

- *fragment an existing population into two or more populations.*

The works will not fragment an Eastern Bristlebird population into two or more populations. Post-work this species will be able to traverse the works area.

- *adversely affect habitat critical to the survival of a species.*

No habitat critical to the survival of this species was recorded within the study area.

- *disrupt the breeding cycle of a population.*

The works would not disrupt the breeding cycle of an important population of this species.

- *modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.*

The proposal is not considered to remove, modify, fragment or isolate Eastern Bristlebird habitat such that the long-term survival of this species would be jeopardised. As extensive areas of similar habitat extend beyond the boundaries of the scope of works and no native vegetation removal is proposed, the proposal is not expected to result in a disturbance to this species' movement patterns.

- *result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat.*

Beyond the existing situation, with species such as Dogs, Foxes and Cats predicted to be present, the works proposed will not result in the establishment of invasive species that are harmful to this species.

- *introduce disease that may cause the species to decline.*

The proposal is unlikely to introduce diseases that may cause the Eastern Bristlebird to decline.

- *or interfere substantially with the recovery of the species.*

It is considered that the proposed action would not interfere with the recovery of this species.

Conclusion

The proposed action is unlikely to have a significant impact on the potential presence of the Eastern Bristlebird or its habitat within the locality. Therefore, referral of the matter to the Federal Minister for the Environment and Energy for further consideration or approval is not required.

Appendix 4. Ecologically sustainable development

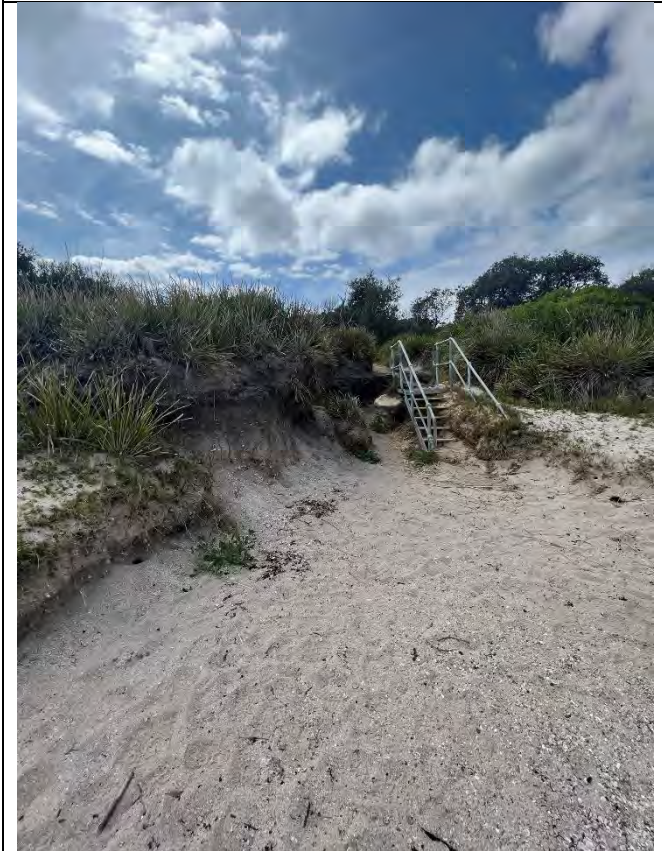
1. The precautionary principle – that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
2. Inter-generational equity – that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.
3. Conservation of biological diversity and ecological integrity – should be a fundamental consideration [of the decision to undertake the activity].
4. Improved valuation, pricing and incentive mechanisms – that environmental factors should be included in the valuation of assets and services, such as:
 - (i) polluter pays—that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,
 - (ii) the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,
 - (iii) environmental goals, having been established, should be pursued in the most cost-effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.

ESD Principle	Application to the Project
Precautionary principle	The proposal does not pose a risk of serious or irreversible environmental damage. Any adverse impacts associated with the proposal will be minor, temporary and short-term. Measures to reduce adverse impacts as far as practicable have been identified within this REF.
Intergenerational equity	Ultimately, the proposed remediation works to the Aboriginal shell midden and Wilsons Beach access track will provide an improved level of service to visitors; while conserving the natural, cultural and recreational values of the study area for future generations.
Conservation of biological diversity and ecological integrity	The conservation of biological diversity and ecological integrity have been assessed within this REF, within the impact assessment of Section 6 of the REF. Clause 171(2) of the EP&A Regulations 2021 sets out 18 factors that need to be considered when assessing environmental impact under Part 5 of the EP&A Act. These factors are addressed in this report and summarised in Section 7 of the REF.
Improved valuation and pricing of environmental resources	DPHI – Crown Lands recognises the value of environmental resources and aims to minimise the impact of its activities by ensuring that appropriate mitigation measures are implemented for all aspects of the proposal.

Appendix 5. Photographic record (taken November 2023)



Sooty Oystercatcher (*Haematopus fuliginosus*) (Vulnerable, BC Act) recorded near the study area.



Character of the access point to Wilsons Beach with the steel staircase present.



Character of the access to Wilson’s Beach with adjacent vegetation and erosion impacts present.



Character of a section of the access track before the steel staircase.



Character of the potential Aboriginal shell midden and the impacts of erosion.



Character of the existing Wilsons Beach Track.



Character of the steel staircase and eroded sandstone. Photograph taken looking in a westerly direction.



Character of Abrahams Bosom Creek 900 m south of the study area. Photograph taken looking southeast.



Character of the vegetation in proximity to the proposed work area. Photograph taken facing north.



Character of the carpark before Abrahams Bosom Walking Track. Photograph taken looking northwest.



Character of the potential Aboriginal shell midden and impacts of erosion to be remediated.



The character of the gradient, and associated ocean views of the South Pacific Ocean present below the proposed activity. Photograph taken facing west at 10:06 AM on 16/11/2023. High tide reached its peak at 10:40 AM at 1.7 m.



Appendix 6. Flora list

Key

- Weed of National Significance (WoNS)

* - Exotic

FAMILY	Scientific Name	Common Name
FILICOPSIDA		
Dennstaedtiaceae	<i>Pteridium esculentum</i>	Bracken Fern
MAGNOLIOPSIDA - DICOTYLEDONS		
Apiaceae	<i>Hydrocotyle bonariensis</i> *	Coastal Plain Pennywort (aka Kurnell Curse)
Brassicaceae	<i>Cakile edetula subsp. edentula</i> *	Sea Rocket
Casuarinaceae	<i>Allocasuarina distyla</i>	
Dilleniaceae	<i>Hibbertia scandens</i>	Golden Guinea Flower
Fabaceae: Faboideae	<i>Kennedia rubicunda</i>	Dusky Coral Pea
Fabaceae: Mimosoideae	<i>Acacia longifolia var. sophorae</i>	Coastal Wattle
	<i>Acacia suaveolens</i>	Sweet-scented Wattle
Myrtaceae	<i>Eucalyptus botryoides</i>	Bangalay
	<i>Leptospermum trinervium</i>	Paperbark Tea-tree
	<i>Leptospermum rotundifolium</i>	Round-leaved Tea-tree
	<i>Melaleuca thymifolia</i>	
Oleaceae	<i>Notelaea longifolia</i>	Mock Olive
Pittosporaceae	<i>Pittosporum undulatum</i>	Sweet Pittosporum
Plantaginaceae	<i>Plantago lanceolata</i> *	Lamb's Tongue
Primulaceae	<i>Lysimachia arvensis</i> *	Scarlet Pimpernel
Proteaceae	<i>Banksia ericifolia</i>	Heath-leaved Banksia
	<i>Banksia integrifolia</i>	Coastal Banksia
	<i>Banksia paludosa subsp. paludosa</i>	Swamp Banksia
	<i>Banksia serrata</i>	Old Man Banksia
	<i>Hakea teretifolia</i>	Dagger Hakea
Sapindaceae	<i>Cupaniopsis anacardioides</i>	Tuckeroo
Vitaceae	<i>Cissus hypoglauca</i>	Five-leaf Water Vine
MAGNOLIOPSIDA - MONOCOTYLEDONS		
Asparagaceae	# <i>Asparagus aethiopicus</i> *	Asparagus Fern
Cyperaceae	<i>Gahnia clarkei</i>	Tall Saw Sedge
Lomandraceae	<i>Lomandra longifolia</i>	Mat Rush
Phormiaceae	<i>Dianella carulea var. producta</i>	Blue Flax Lily
Poaceae	<i>Cenchrus clandestinus</i> *	Kikuyu Grass
	<i>Cynodon dactylon</i>	Couch
	<i>Spinifex sericeus</i>	Spinifex
Restionaceae	<i>Chordifex fastigiatus</i>	Tassel Rush
	<i>Lepyrodia scariosa</i>	

Appendix 7. Fauna list

Key

- A – species listed under the EPBC Act
 B – species listed under the BC Act or FM ACT (fish)
 V – species is Vulnerable
 E – species is Endangered
 Ma – species listed as marine under the EPBC Act
 F – migratory Family listed under the EPBC Act
 ☞ – Endangered Population
 * – indicates introduced species

A	B	Common Name	Family and Scientific Name	Observation method
		MAMMALS		
			Leporidae	
		* Rabbit	<i>Oryctolagus cuniculus</i>	Burrow's present
		BIRDS		
			Anatidae	
		Australian Wood Duck	<i>Chenonetta jubata</i>	Observed
			Columbidae	
		Common Bronzewing	<i>Phaps chalcoptera</i>	Observed
			Phalacrocoracidae	
		Great Cormorant	<i>Phalacrocorax carbo</i>	Observed
		Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>	Observed
Ma	V	White-bellied Sea-eagle	<i>Haliaeetus leucogaster</i>	Observed
			Haematopodidae	
	V	Sooty Oystercatcher	<i>Haematopus fuliginosus</i>	Observed
F			Charadriidae	
		Masked Lapwing	<i>Vanellus miles</i>	Observed
			Laridae	
		Silver Gull	<i>Chroicocephalus novaehollandiae</i>	Observed
			Cacatuidae	
		Yellow-tailed Black Cockatoo	<i>Calyptorhynchus funereus</i>	Observed
		Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	Observed / Heard
			Psittacidae	
		Crimson Rosella	<i>Platycercus elegans</i>	Observed
			Halcyonidae	
		Laughing Kookaburra	<i>Dacelo novaeguineae</i>	Heard
			Dasyornithidae	
E	E	Eastern Bristlebird – southern subspecies	<i>Dasyornis brachypterus brachypterus</i>	Observed
			Acanthizidae	
		White-throated Gerygone	<i>Gerygone albogularis</i>	Heard
		Brown Thornbill	<i>Acanthiza pusilla</i>	Heard
			Meliphagidae	
		Noisy Miner	<i>Manorina melanocephala</i>	Observed/ Heard
		Lewin's Honeyeater	<i>Meliphaga lewinii</i>	Heard
		Yellow-faced Honeyeater	<i>Lichenostomus chrysops</i>	Heard

A	B	Common Name	Family and Scientific Name	Observation method
		New Holland Honeyeater	<i>Phylidonyis novaehollandiae</i>	Heard
			Psophodidae	
		Eastern Whipbird	<i>Psophodes olivaceus</i>	Heard
			Artamidae	
		Pied Currawong	<i>Strepera graculina</i>	Observed
			Rhipiduridae	
		Grey Fantail	<i>Rhipidura albiscapa</i>	Observed
		Willie Wagtail	<i>Rhipidura leucophrys</i>	Observed
			Corvidae	
		Australian Raven	<i>Corvus coronoides</i>	Observed
			Petroicidae	
		Eastern Yellow Robin	<i>Eopsaltria australis</i>	Observed
		REPTILES		
			Scincidae	
		Eastern Water Skink	<i>Eulamprus quoyii</i>	Observed
		Dark-flecked Garden Sun-skink	<i>Lampropholis delicata</i>	Observed

Appendix 8. Likelihood of occurrence table

A State or nationally listed threatened species is considered to have a:

Likelihood	Criteria
Recorded	The species was observed in the study area during the current survey.
High	The species has been recorded (via BioNet) within 10 km of the study area (within the last 10 years) and suitable habitat is present; or the species has the potential to fly over the site, is dependent on identified suitable habitat within the study area (i.e., for breeding or important lifecycle periods such as winter flowering resources), has been recently recorded (within five years), and is known or likely to visit the study area during regular seasonal movements or migration.
Moderate	The species has a predicted occurrence (via the BioNet geographic search) and there is potential habitat present, or the species is highly mobile and unlikely to maintain sedentary populations; however, may seasonally use resources within the study area opportunistically or during migration. The species is unlikely to be dependent (i.e., for breeding or important lifecycle periods such as winter flowering resources) on habitat within the study area, or habitat is in a modified or degraded state.
Low	Based on a field assessment of the habitat constraints or microhabitats on the study area, the habitat is identified as being substantially degraded such that the species is unlikely to utilise the study area (or specific vegetation zones), an expert report states the species is unlikely to be present within the study area or specific vegetation zones, and the species has not been recently recorded within 10 km. For fauna species, it may be an occasional visitor, but habitat similar to the study area is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important lifecycle periods such as winter flowering resources) on available habitats; or, the species is not highly mobile, is dependent on identified suitable habitat features (e.g., hollows, rocky outcrops) within the study area; however, has not been recorded in the locality in the last 10 years on BioNet.
None	Suitable habitat for a species is absent within the study area, regardless of whether they have been recorded within 10 km, or have a predicted occurrence.

Key

V - vulnerable E - endangered CE - critically endangered M - migratory Ma - marine PX - presumed extinct

Note: As these habitats are not present, no pelagic, estuarine, wetland or fish species have been included in the following table. Given that the proposed work is not located within the Commonwealth marine area, this being from 3 to 200 nautical miles from the coast, no species listed as marine under the EPBC Act have been considered; nor has the marine status of any species been acknowledged.

Common Name	Status		Primary habitat requirements	No. of records	Likelihood of Occurrence ⁶	Significance assessment undertaken
	EPBC Act	BC Act				
PLANTS						
Pretty Beard Orchid <i>Calochilus pulchellus</i>		E	The life cycle of <i>C. pulchellus</i> is typical for temperate zone members of the genus, with the leaf emerging from a subterranean tuber in mid-winter, and flowering occurring from late October to late November, with only one or two flowers open at a time and each flower lasting only 2-4 days. The plant dies back to tubers in later summer. Associated with PCT 3809.	BioNet (4)	Low. No suitable habitat present.	No
Sand Spurge <i>Chamaesyce psammogeton</i>		E	Grows on fore-dunes, pebbly strandlines and exposed headlands, often with Spinifex (<i>Spinifex sericeus</i>) and Prickly Couch (<i>Zoysia macrantha</i>).	BioNet (6)	Moderate. Targeted during survey efforts, not found.	No
Leafless Tongue Orchid <i>Cryptostylis hunteriana</i>	V	V	Does not appear to have well defined habitat preferences and is known from a range of communities, including swamp-heath and woodland. Associated with PCT 3809.	BioNet (76)	As above.	No
Australian Saltgrass <i>Distichlis distichophylla</i>	E		Common in Victoria and Tasmania; limited scattered NSW range near coastal settings and one existing population at Lake Cargelligo. Coloniser of damp saline soils; edges of salt marshes and on low dunes.	BioNet (1)	Low. No suitable habitat present.	No
Bauer's Midge Orchid <i>Genoplesium baueri</i>	E	E	Grows in dry sclerophyll forest and moss gardens over sandstone. Associated with PCT 3809.	BioNet (6)	As above.	No
Jervis Bay Leek Orchid <i>Prasophyllum affine</i>	E	E	Grows on poorly drained grey clay soils that support low heathland and sedgeland communities. Associated with PCT 3809.	BioNet (121)	As above.	No
Villous Mintbush <i>Prostanthera densa</i>	V	V	Recorded within the RNP. Generally, grows in sclerophyll forest and shrubland on coastal headlands and near coastal ranges, chiefly on sandstone, and rocky slopes near the sea. Associated with PCT 3809.	BioNet (1036)	Moderate. Suitable habitat present. Targeted during survey but not found.	Yes
Magenta Lilly Pilly <i>Syzygium paniculatum</i>	V	E	Found only in NSW, in a narrow, linear coastal strip from Upper Lansdowne to Conjola State Forest. On the south coast the Magenta Lilly Pilly occurs on grey soils over sandstone, restricted mainly to remnant stands of littoral (coastal) rainforest.	BioNet (12)	Low. No suitable habitat present.	No

⁶ For the site to support, and be important for the lifecycle requirements of, a locally viable population of this species.

Common Name	Status		Primary habitat requirements	No. of records	Likelihood of Occurrence ⁶	Significance assessment undertaken
	EPBC Act	BC Act				
Narrow-leafed <i>Wilsonia</i> <i>Wilsonia backhousei</i>		V	Found on the coast between Mimosa Rocks National Park and Wamberal north of Sydney. This is a species of the margins of salt marshes and lakes.	BioNet (5)	As above.	No
Round-leafed <i>Wilsonia</i> <i>Wilsonia rotundifolia</i>		E	Grows in mud in coastal saltmarsh and inland saline or brackish lake beds.	BioNet (3)	As above.	No
MAMMALS						
New Zealand Fur-seal <i>Arctocephalus forsteri</i>		V	Prefers rocky parts of islands with jumbled terrain and boulders.	BioNet (4)	Low. No suitable habitat present.	No
Australian Fur-seal <i>Arctocephalus pusillus doriferus</i>		V	Prefers rocky parts of islands with flat, open terrain. They occupy flatter areas than do New Zealand Fur-seals where they occur together.	BioNet (23)	As above.	No
Spotted-tailed Quoll <i>Dasyurus maculatus</i>	E	V	Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Associated with PCT 3809.	BioNet (2)	As above.	No
Dugong <i>Dugong dugon</i>		E	Warm coastal and island waters to northern NSW; occurs in shallow water such as tidal sandbanks and estuaries.	BioNet (7)	As above.	No
Southern Brown Bandicoot <i>Isoodon obesulus obesulus</i>	E	E	Generally, only found in heath or open forest with a heathy understorey on sandy or friable soils. Associated with PCT 3809.	BioNet (2)	As above.	No
Koala <i>Phascolarctos cinereus</i>	E	E	Open eucalypt forest and woodland, containing a variety of 'preferred' food tree species.	BioNet (2)	As above.	No
Eastern Pygmy-possum <i>Cercartetus nanus</i>		V	Found in a broad range of habitats from rainforest through sclerophyll (including Box-Ironbark) forest and woodland to heath, but in most areas woodlands and heath appear to be preferred, except in north-eastern NSW where they are most frequently encountered in rainforest. Feeds largely on nectar and pollen collected from banksias, eucalypts and bottlebrushes. Associated with PCT 3809.	BioNet (3)	As above.	No
Yellow-bellied Glider <i>Petaurus australis</i>		V	Occur in tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils.	BioNet (29)	As above.	No
Southern Greater Glider <i>Petauroides volans</i>	E	E	Largely restricted to eucalypt forests and woodlands, utilising tree hollows.	BioNet (6)	As above.	No
Grey-headed Flying-fox <i>Pteropus poliocephalus</i>	V	V	Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and	BioNet (18)	As above.	No

Common Name	Status		Primary habitat requirements	No. of records	Likelihood of Occurrence ⁶	Significance assessment undertaken
	EPBC Act	BC Act				
			swamps as well as urban gardens and cultivated fruit crops. Associated with PCT 3809.			
Eastern False Pipistrelle <i>Falsistrellus tasmaniensis</i>		V	Prefers moist habitats, with trees taller than 20 m. Generally, roosts in hollow-bearing trees (eucalypts), but has also been found under loose bark on trees or in buildings.	BioNet (4)	As above.	No
Southern Myotis <i>Myotis macropus</i>		V	Generally, roost in groups of 10 - 15 close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage. Forage over streams and pools catching insects and small fish by raking their feet across the water surface.	BioNet (30)	As above.	No
Greater Broad-nosed Bat <i>Scoteanax rueppellii</i>		V	Utilises a variety of habitats from woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest. Usually roosts in tree hollows but also in buildings.	BioNet (4)	As above.	No
Large Bent-winged Bat <i>Miniopterus orianae oceanensis</i>		V	Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures.	BioNet (8)	As above.	No
Eastern Coastal Free-tailed Bat <i>Mormopterus norfolkensis</i>		V	Occur in dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range. Roost mainly in tree hollows but will also roost under bark or in man-made structures.	BioNet (4)	As above.	No
BIRDS						
Black Bittern <i>Ixobrychus flavicollis</i>		V	Inhabits both terrestrial and estuarine wetlands, generally in areas of permanent water and dense vegetation. Where permanent water is present, the species may occur in flooded grassland, forest, woodland, rainforest and mangroves.	BioNet (2)	Low. No suitable habitat present.	No
Little Tern <i>Sternula albifrons</i>	M, Ma	E	Almost exclusively coastal, preferring sheltered environments; however may occur several kilometres from the sea in harbours, inlets and rivers (with occasional offshore islands or coral cay records). Nests in small, scattered colonies in low dunes or on sandy beaches just above high tide mark near estuary mouths or adjacent to coastal lakes and islands.	BioNet (322)	As above.	No

Common Name	Status		Primary habitat requirements	No. of records	Likelihood of Occurrence ⁶	Significance assessment undertaken
	EPBC Act	BC Act				
Sooty Oystercatcher <i>Haematopus fuliginosus</i>		V	Favours rocky headlands, rocky shelves, exposed reefs with rock pools, beaches and muddy estuaries. Forages on exposed rock or coral at low tide for foods such as limpets and mussels.	BioNet (9)	Recorded during survey efforts.	Yes
Pied Oystercatcher <i>Haematopus longirostris</i>		E	Favours intertidal flats of inlets and bays, open beaches and sandbanks. Forages on exposed sand, mud and rock at low tide, for molluscs, worms, crabs and small fish. The chisel-like bill is used to pry open or break into shells of oysters and other shellfish.	BioNet (16)	Moderate. Suitable habitat present. Targeted during survey but not found.	No
Sanderling <i>Calidris alba</i>	M	V	Often found in coastal areas on low beaches of firm sand, near reefs and inlets, along tidal mudflats and bare open coastal lagoons; individuals are rarely recorded in near-coastal wetlands. Associated with PCT 3809.	BioNet (1)	Low. No suitable habitat present.	No
Eastern Curlew <i>Numenius madagascariensis</i>	CE, M, Ma		Found on intertidal mudflats and sandflats, often with beds of seagrass, on sheltered coasts, especially estuaries, mangrove swamps, bays, harbours and lagoons. Associated with PCT 3809.	BioNet (9)	As above.	No
Bar-tailed Godwit <i>Limosa lapponica</i>	M, Ma		Found mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. Associated with PCT 3809.	BioNet (3)	As above.	No
Black-tailed Godwit <i>Limosa limosa</i>	M, Ma	V	Usually found in sheltered bays, estuaries and lagoons with large intertidal mudflats and/or sandflats.	BioNet (1)	As above.	No
Gould's Petrel <i>Pterodroma leucoptera leucoptera</i>	E, M, Ma	V	Breeds on Cabbage Tree Island and Boondelbah Island. Nest predominantly in natural rock crevices and also in hollow fallen palm trunks.	BioNet (1)	As above.	No
Little Shearwater <i>Puffinus assimilis</i>	M, Ma	V	Widespread in subtropical regions. Largest breeding sites around Lord Howe Island.	BioNet (1)	As above.	No
Curlew Sandpiper <i>Calidris ferruginea</i>	CE, M, Ma	E	Generally, occupies littoral and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats of sheltered coasts.	BioNet (3)	As above.	No
Broad-billed Sandpiper <i>Limicola falcinellus</i>	M, Ma	V	Breed in northern Siberia. Overwinter on the northern coast and occasionally on the southern coast of NSW. Favour sheltered parts of the coast, such as estuarine sandflats and mudflats, harbours, lagoons,	BioNet (2)	As above.	No

Common Name	Status		Primary habitat requirements	No. of records	Likelihood of Occurrence ⁶	Significance assessment undertaken
	EPBC Act	BC Act				
			saltmarshes, and reefs as feeding and roosting habitat.			
White-throated Needletail <i>Hirundapus caudacutus</i>	V, M, Ma		Almost exclusively aerial. Takes insects on wing over a range of habitat types. Recorded most often above wooded areas, including open forest and rainforest.	BioNet (4)	Low. Species may fly over the study area but will not rely on the site for their lifecycle requirements.	No
Beach Stone-curlew <i>Esacus magnirostris</i>		CE	Found exclusively along the coast, on a wide range of beaches, islands, reefs and in estuaries, and may often be seen at the edges of or near mangroves. They forage in the intertidal zone of beaches and estuaries, on islands, flats, banks and spits of sand, mud, gravel or rock, and among mangroves.	BioNet (4)	Low. No suitable habitat present.	No
Lesser Sand-plover <i>Charadrius mongolus</i>	E, M	V	Almost entirely coastal in NSW, favouring the beaches of sheltered bays, harbours and estuaries with large intertidal sandflats or mudflats; occasionally occurs on sandy beaches, coral reefs and rock platforms. Associated with PCT 3809.	BioNet (1)	As above.	No
Eastern Hooded Dotterel/Plover <i>Thinornis cucullatus cucullatus</i>	V		A small beach nesting bird. It mainly occurs on wide beaches backed by dunes with large amounts of seaweed and jetsam, creek mouths and inlet entrances. Associated with PCT 3809.	BioNet (3)	As above.	No
Wandering Albatross <i>Diomedea exulans</i>	E, M, Ma	E	Visits Australian waters and breeds on islands north of the Antarctic Circle on exposed ridges and hillocks. Feed in pelagic, offshore and inshore waters, typically at night.	BioNet (4)	As above.	No
Eastern Osprey <i>Pandion cristatus</i>	M, Ma	V	Occur in littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands. Associated with PCT 3809.	BioNet (6)	As above.	No
Square-tailed Kite <i>Lophoictinia isura</i>		V	Found in a variety of timbered habitats including dry woodlands and open forests. Shows a particular preference for timbered watercourses. Associated with PCT 3809.	BioNet (3)	As above.	No
White-bellied Sea-eagle <i>Haliaeetus leucogaster</i>	Ma	V	Found in coastal habitats (especially those close to the sea-shore) and around terrestrial wetlands in tropical and temperate regions of mainland Australia. Associated with PCT 3809.	BioNet (21)	Recorded during survey efforts.	Yes
Little Eagle <i>Hieraaetus morphnoides</i>		V	Occupies open eucalypt forest, woodland or open woodland. Sheoak or <i>Acacia</i> woodlands and riparian	BioNet (1)	As above.	No

Common Name	Status		Primary habitat requirements	No. of records	Likelihood of Occurrence ⁶	Significance assessment undertaken
	EPBC Act	BC Act				
			woodlands of interior NSW are also used. Associated with PCT 3809.			
Gang-gang Cockatoo <i>Callocephalon fimbriatum</i>	E	V	Prefers tall mountain forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests during summer, these being at higher altitudes. In winter, occurs at lower altitudes in drier, more open eucalypt forests and woodlands, or in dry forest in coastal areas. Associated with PCT 3809.	BioNet (9)	As above.	No
South-eastern Glossy Black-Cockatoo <i>Calyptorhynchus lathami lathami</i>	V	V	Inhabits eucalypt woodland and feeds almost exclusively on Casuarina fruits. Associated with PCT 3809.	BioNet (83)	As above.	No
Little Lorikeet <i>Glossopsitta pusilla</i>		V	Forages primarily in the open Eucalypt forest and woodland canopies, particularly along water courses; occasionally in Angophoras, Melaleucas and other tree species, also riparian habitats are used. Associated with PCT 3809.	BioNet (3)	As above.	No
Swift Parrot <i>Lathamus discolor</i>	CE, Ma	E	Eucalypt forests. When over-wintering on the mainland, this species is dependent on winter-flowering eucalypt species. Associated with PCT 3809.	BioNet (2)	As above.	No
Eastern Ground-Parrot <i>Pezoporus wallicus wallicus</i>		V	Occurs in high rainfall coastal and near coastal low heathlands and sedgeland, generally below 1 m in height and very dense. Associated with PCT 3809.	BioNet (41)	As above.	No
Powerful Owl <i>Ninox strenua</i>		V	Inhabits a range of vegetation types, from woodland and open sclerophyll forest to tall open wet forest and rainforest.	BioNet (43)	Low. No suitable habitat.	No
Masked Owl <i>Tyto novaehollandiae</i>		V	Lives in dry eucalypt forests and woodlands from sea level to 1100 m. Associated with PCT 3809.	BioNet (3)	As above.	No
Eastern Bristlebird <i>Dasyornis brachypterus</i>	E	E	Habitat for central and southern populations is characterised by dense, low vegetation including heath and open woodland with a heathy understorey. Associated with PCT 3809.	BioNet (166)	Recorded during survey efforts.	Yes
White-fronted Chat <i>Epthianura albifrons</i>		V	Usually found foraging on bare or grassy ground in wetland areas, singly or in pairs.	BioNet (10)	Low. No suitable habitat.	No
Varied Sittella <i>Daphoenositta chrysoptera</i>		V	Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature	BioNet (1)	As above.	No

Common Name	Status		Primary habitat requirements	No. of records	Likelihood of Occurrence ⁶	Significance assessment undertaken
	EPBC Act	BC Act				
			smooth-barked gums with dead branches, mallee and <i>Acacia</i> woodland. Associated with PCT 3809.			
Dusky Woodswallow <i>Artamus cyanopterus cyanopterus</i>		V	Primarily inhabit dry, open eucalypt forests and woodlands, including mallee associations, with an open or sparse understorey of eucalypt saplings, acacias and other shrubs, and ground-cover of grasses or sedges and fallen woody debris. Associated with PCT 3809.	BioNet (1)	As above.	No
REPTILES						
Loggerhead Turtle <i>Caretta Caretta</i>	E	E	Ocean-dwellers; found in tropical and temperate waters, wide distribution from Jervis Bay to the NSW north coast and Sydney. Female comes ashore to lay eggs during warmer months.	BioNet (1)	Low. No suitable habitat.	No
Green Turtle <i>Chelonia mydas</i>	V	V	Ocean-dwellers; widely distributed in tropical and sub-tropical seas, and coastal waters of NSW. Generally seen on the north or central coast, occasionally recorded in the south too. Scattered nesting along the NSW coast where eggs are laid in holes on the beach.	BioNet (17)	As above.	No
Leatherback Turtle <i>Dermochelys coriacea</i>	E	E	Topical and temperate seas, and in all coastal waters in Australia. Feed in coastal waters from southern Queensland to the central coast of NSW. Rarely breeds in Australia; however, occasionally has been recorded to on the NSW coast, including between Ballina and Lennox Head in northern NSW.	BioNet (1)	As above.	No
AMPHIBIANS						
Green and Golden Bell Frog <i>Litoria aurea</i>	V	E	Inhabits a variety of environments, including disturbed sites, ephemeral ponds, wetlands, marshes, dams and stream-sides, particularly those that contain one or more of the following aquatic plants: bullrush (<i>Typha</i> spp.), spikerush (<i>Eleocharis</i> spp.), <i>Juncus kraussii</i> , <i>Schoenoplectus littoralis</i> and <i>Sporobolus virginicus</i> . Associated with PCT 3809.	BioNet (32)	Low. No suitable habitat.	No
INSECTA						
Giant Dragonfly <i>Petalura gigantea</i>		E	Live in permanent swamps and bogs with some free water and open vegetation.	BioNet (1)	Low. No suitable habitat.	No

Appendix 9. PMST

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Australian Government

Department of Climate Change, Energy,
the Environment and Water

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. Please see the caveat for interpretation of information provided here.

Report created: 26-Oct-2023

[Summary](#)

[Details](#)

[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment 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 (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	1
Listed Threatened Ecological Communities:	6
Listed Threatened Species:	96
Listed Migratory Species:	80

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 <https://www.dcceew.gov.au/parks-heritage/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 Lands:	8
Commonwealth Heritage Places:	4
Listed Marine Species:	103
Whales and Other Cetaceans:	28
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	2
Regional Forest Agreements:	1
Nationally Important Wetlands:	4
EPBC Act Referrals:	9
Key Ecological Features (Marine):	None
Biologically Important Areas:	13
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area

[\[Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name	Buffer Status
Commonwealth Marine Areas (EPBC Act)	In buffer area only

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.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to occur within area	In feature area
Illawarra and south coast lowland forest and woodland ecological community	Critically Endangered	Community may occur within area	In feature area
Littoral Rainforest and Coastal Vine Thickets of Eastern Australia	Critically Endangered	Community likely to occur within area	In buffer area only
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community likely to occur within area	In feature area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area	In buffer area only

Listed Threatened Species

[\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat known to occur within area	In feature area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat may occur within area	In feature area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature 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	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area	In feature area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In feature area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area	In feature area
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In feature area
Pycnoptilus floccosus Pilotbird [525]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat known to occur within area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Thinornis cucullatus cucullatus Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat known to occur within area	In feature area
FISH			
Epinephelus daemeli Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In feature area
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area	In buffer area only
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Rexea solandri (eastern Australian population) Eastern Gemfish [76339]	Conservation Dependent	Species or species habitat may occur within area	In buffer area only
Serirolella brama Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area	In feature area
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area	In feature area

FROG

Scientific Name	Threatened Category	Presence Text	Buffer Status
Heleioporus australiacus Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat known to occur within area	In feature area
Litoria watsoni Watson's Tree Frog [91509]	Endangered	Species or species habitat may occur within area	In buffer area only
MAMMAL			
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In feature area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area	In feature 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	In feature area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area	In feature area
Isoodon obesulus obesulus Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (southeastern) [68050]	Endangered	Species or species habitat may occur within area	In feature area
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat known to occur within area	In feature 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]	Endangered	Species or species habitat likely to occur within area	In feature area
Potorous tridactylus trisulcatus Long-nosed Potoroo (southern mainland) [86367]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
PLANT			
Astrotricha crassifolia Thick-leaf Star-hair [10352]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Caladenia tessellata Thick-lipped Spider-orchid, Daddy Long-legs [2119]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Calochilus pulchellus Pretty Beard Orchid, Pretty Beard-orchid [84677]	Endangered	Species or species habitat known to occur within area	In feature area
Corunastylis vernalis listed as Genoplesium vernale East Lynne Midge-orchid [78699]	Vulnerable	Species or species habitat may occur within area	In feature area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat known to occur within area	In feature area
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Genoplesium baueri Yellow Gnat-orchid, Bauer's Midge Orchid, Brittle Midge Orchid [7528]	Endangered	Species or species habitat likely to occur within area	In feature area
Melaleuca biconvexa Biconvex Paperbark [5583]	Vulnerable	Species or species habitat may occur within area	In feature area
Pimelea spicata Spiked Rice-flower [20834]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Pomaderris brunnea Rufous Pomaderris, Brown Pomaderris [16845]	Vulnerable	Species or species habitat may occur within area	In feature area
Prasophyllum affine Jervis Bay Leek Orchid, Culburra Leek-orchid, Kinghorn Point Leek-orchid [2210]	Endangered	Species or species habitat known to occur within area	In feature area
Prostanthera densa Villous Mintbush [12233]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pterostylis gibbosa Illawarra Greenhood, Rufa Greenhood, Pouched Greenhood [4562]	Endangered	Species or species habitat likely to occur within area	In feature area
Rhizanthella slateri Eastern Underground Orchid [11768]	Endangered	Species or species habitat may occur within area	In buffer area only
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat may occur within area	In feature area
Syzygium paniculatum Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area	In feature area
REPTILE			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Hoplocephalus bungaroides Broad-headed Snake [1182]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
SHARK			
Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In feature area
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In feature area
Listed Migratory Species [Resource Information]			
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Ardenna grisea Sooty Shearwater [82651]		Species or species habitat likely to occur within area	In feature area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat may occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area	In feature area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In feature area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In feature area
Sternula albifrons Little Tern [82849]		Breeding known to occur within area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Migratory Marine Species			
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In feature area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In feature area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area	In feature area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In feature area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Dugong dugon Dugong [28]		Species or species habitat may occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area	In feature area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area	In feature area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area	In feature area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In feature area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area	In feature area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area	In buffer area only
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In feature area
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area	In buffer area only
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Arenaria interpres Ruddy Turnstone [872]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Calidris acuminata Sharp-tailed Sandpiper [874]		Foraging, feeding or related behaviour known to occur within area	In feature area
Calidris alba Sanderling [875]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area	In feature area
Calidris ruficollis Red-necked Stint [860]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Calidris tenuirostris Great Knot [862]	Critically Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Charadrius bicinctus Double-banded Plover [895]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area	In feature area
Gallinago megala Swinhoe's Snipe [864]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Gallinago stenura Pin-tailed Snipe [841]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Limicola falcinellus Broad-billed Sandpiper [842]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Limnodromus semipalmatus Asian Dowitcher [843]		Species or species habitat may occur within area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Limosa limosa Black-tailed Godwit [845]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Numenius minutus Little Curlew, Little Whimbrel [848]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Numenius phaeopus Whimbrel [849]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In buffer area only
Pluvialis fulva Pacific Golden Plover [25545]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Tringa brevipes Grey-tailed Tattler [851]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Tringa glareola Wood Sandpiper [829]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area	In buffer area only
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Foraging, feeding or related behaviour known to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Commonwealth Lands

[\[Resource Information \]](#)

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.

Commonwealth Land Name	State	Buffer Status
Communications, Information Technology and the Arts - Telstra Corporation Limited		

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Australian Telecommunications Commission [11887]	NSW	In buffer area only

Defence

Defence - BEECROFT RAPIER RANGE [10049]	NSW	In buffer area only
Defence - BEECROFT RAPIER RANGE [10048]	NSW	In buffer area only
Defence - BEECROFT RAPIER RANGE [10050]	NSW	In buffer area only
Defence - BEECROFT RAPIER RANGE [10051]	NSW	In buffer area only
Defence - BEECROFT RAPIER RANGE [10052]	NSW	In buffer area only

Unknown

Commonwealth Land - [12042]	NSW	In buffer area only
Commonwealth Land - [12041]	NSW	In buffer area only

Commonwealth Heritage Places

[[Resource Information](#)]

Name	State	Status	Buffer Status
Historic			
Point Perpendicular Lightstation	NSW	Listed place	In buffer area only

Indigenous

Crocodile Head Area	NSW	Within listed place	In buffer area only
Currarong Rockshelters Area	NSW	Within listed place	In buffer area only

Natural

Beecroft Peninsula	NSW	Listed place	In buffer area only
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Listed Marine Species

[[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Anous stolidus			
Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Ardena carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Ardena grisea as Puffinus griseus Sooty Shearwater [82651]		Species or species habitat likely to occur within area	In feature area
Arenaria interpres Ruddy Turnstone [872]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Foraging, feeding or related behaviour known to occur within area	In feature area
Calidris alba Sanderling [875]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ruficollis Red-necked Stint [860]		Foraging, feeding or related behaviour known to occur within area overfly marine area	In buffer area only
Calidris tenuirostris Great Knot [862]	Critically Endangered	Foraging, feeding or related behaviour known to occur within area overfly marine area	In buffer area only
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat may occur within area	In feature area
Charadrius bicinctus Double-banded Plover [895]		Foraging, feeding or related behaviour known to occur within area overfly marine area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Charadrius ruficapillus Red-capped Plover [881]		Foraging, feeding or related behaviour known to occur within area overfly marine area	In buffer area only
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Foraging, feeding or related behaviour known to occur within area overfly marine area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area	In feature area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area overfly marine area	In feature area
Gallinago megala Swinhoe's Snipe [864]		Foraging, feeding or related behaviour likely to occur within area overfly marine area	In buffer area only
Gallinago stenura Pin-tailed Snipe [841]		Foraging, feeding or related behaviour likely to occur within area overfly marine area	In buffer area only
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Foraging, feeding or related behaviour known to occur within area overfly marine area	In buffer area only
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Limicola falcinellus Broad-billed Sandpiper [842]		Foraging, feeding or related behaviour known to occur within area overfly marine area	In buffer area only
Limnodromus semipalmatus Asian Dowitcher [843]		Species or species habitat may occur within area overfly marine area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Limosa limosa Black-tailed Godwit [845]		Foraging, feeding or related behaviour known to occur within area overfly marine area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Foraging, feeding or related behaviour likely to occur within area overfly marine area	In buffer area only
Numenius phaeopus Whimbrel [849]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In feature area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In feature area
Pluvialis fulva Pacific Golden Plover [25545]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Stercorarius antarcticus as Catharacta skua Brown Skua [85039]		Species or species habitat may occur within area	In buffer area only
Sterna striata White-fronted Tern [799]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Sternula albifrons as Sterna albifrons Little Tern [82849]		Breeding known to occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche bulleri platei as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Thinornis cucullatus as Thinornis rubricollis Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thinornis cucullatus cucullatus as Thinornis rubricollis rubricollis Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Tringa glareola Wood Sandpiper [829]		Foraging, feeding or related behaviour known to occur within area overfly marine area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Foraging, feeding or related behaviour known to occur within area overfly marine area	In buffer area only
Fish			
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area	In feature area
Cosmocampus howensis Lord Howe Pipefish [66208]		Species or species habitat may occur within area	In feature area
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area	In feature area
Hippocampus abdominalis Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area	In feature area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In feature area
Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area	In feature area
Kimblaeus bassensis Trawl Pipefish, Bass Strait Pipefish [66247]		Species or species habitat may occur within area	In feature area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In feature area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In feature area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area	In feature area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area	In feature area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area	In feature area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area	In feature area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area	In feature area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In feature area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area	In feature area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area	In feature area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area	In feature area
Mammal			
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area	In feature area
Arctocephalus pusillus Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area	In feature area
Dugong dugon Dugong [28]		Species or species habitat may occur within area	In feature area
Reptile			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area

Whales and Other Cetaceans [Resource Information]

Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area	In feature area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In feature area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In feature area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Berardius arnuxii Arnoux's Beaked Whale [70]		Species or species habitat may occur within area	In buffer area only
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area	In feature area

Current Scientific Name	Status	Type of Presence	Buffer Status
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In feature area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area	In feature area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area	In buffer area only
Globicephala melas Long-finned Pilot Whale [59282]		Species or species habitat may occur within area	In buffer area only
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In feature area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area	In buffer area only
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area	In buffer area only
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area	In feature area
Lissodelphis peronii Southern Right Whale Dolphin [44]		Species or species habitat may occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In feature area
Mesoplodon bowdoini Andrew's Beaked Whale [73]		Species or species habitat may occur within area	In buffer area only

Current Scientific Name	Status	Type of Presence	Buffer Status
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area	In buffer area only
Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area	In buffer area only
Mesoplodon hectori Hector's Beaked Whale [76]		Species or species habitat may occur within area	In buffer area only
Mesoplodon layardii Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556]		Species or species habitat may occur within area	In buffer area only
Mesoplodon mirus True's Beaked Whale [54]		Species or species habitat may occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area	In feature area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area	In buffer area only
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In feature area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In feature area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area	In buffer area only

Extra Information

State and Territory Reserves [\[Resource Information \]](#)

Protected Area Name	Reserve Type	State	Buffer Status
Jervis Bay	National Park	NSW	In buffer area only
Jervis Bay	Marine Park	NSW	In feature area

Regional Forest Agreements [\[Resource Information \]](#)

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State	Buffer Status
Southern RFA	New South Wales	In feature area

Nationally Important Wetlands [\[Resource Information \]](#)

Wetland Name	State	Buffer Status
Beecroft Peninsula	NSW	In feature area
Jervis Bay Sea Cliffs	NSW	In buffer area only
Shoalhaven/Crookhaven Estuary	NSW	In buffer area only
Wollumboola Lake	NSW	In buffer area only

EPBC Act Referrals [\[Resource Information \]](#)

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
West Culburra Residential Subdivision	2023/09524		Assessment	In buffer area only
Not controlled action				
Clearance of native vegetation to create fire breaks	2004/1534	Not Controlled Action	Completed	In buffer area only
Golf Course Extension	2001/215	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action (particular manner)				
supersonic missile launch facility	2000/120	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Referral decision				
Beecroft Weapons Range Visitors Centre	2004/1322	Referral Decision	Completed	In feature area
Breeding program for Grey Nurse Sharks	2007/3245	Referral Decision	Completed	In feature area
Biologically Important Areas				
Scientific Name		Behaviour	Presence	Buffer Status
Dolphins				
Tursiops aduncus				
Indo-Pacific/Spotted Bottlenose Dolphin [68418]		Breeding	Likely to occur	In buffer area only
Tursiops aduncus				
Indo-Pacific/Spotted Bottlenose Dolphin [68418]		Breeding	Known to occur	In feature area
Seabirds				
Ardena carneipes				
Flesh-footed Shearwater [82404]		Foraging	Known to occur	In buffer area only
Ardena pacifica				
Wedge-tailed Shearwater [84292]		Foraging	Likely to occur	In feature area
Ardena tenuirostris				
Short-tailed Shearwater [82652]		Foraging	Likely to occur	In feature area
Diomedea exulans antipodensis				
Antipodean Albatross [82269]		Foraging	Known to occur	In buffer area only
Pelagodroma marina				
White-faced Storm-petrel [1016]		Breeding	Known to occur	In feature area
Procellaria parkinsoni				
Black Petrel [1048]		Foraging	Likely to occur	In buffer area only
Sharks				
Carcharias taurus				
Grey Nurse Shark [64469]		Foraging	Known to occur	In feature area
Carcharias taurus				
Grey Nurse Shark [64469]		Migration	Known to occur	In buffer area only

Scientific Name	Behaviour	Presence	Buffer Status
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[Carcharodon carcharias](#)

White Shark [64470]	Distribution	Known to occur	In buffer area only
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[Carcharodon carcharias](#)

White Shark [64470]	Distribution	Likely to occur	In buffer area only
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Whales

[Megaptera novaeangliae](#)

Humpback Whale [38]	Foraging	Known to occur	In feature area
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Bioregional Assessments

SubRegion	BioRegion	Website	Buffer Status
Sydney	Sydney Basin	BA website	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and 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

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

Where little information is available for a 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 detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

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

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

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

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

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.

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Department of Climate Change, Energy, the Environment and Water

GPO Box 3090

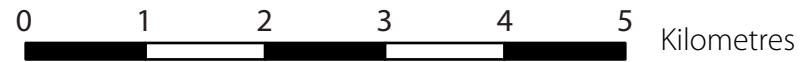
Canberra ACT 2601 Australia

+61 2 6274 1111

Appendix 10. Jervis Bay Marine Park Zoning Map

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Jervis Bay Marine Park Zoning Map



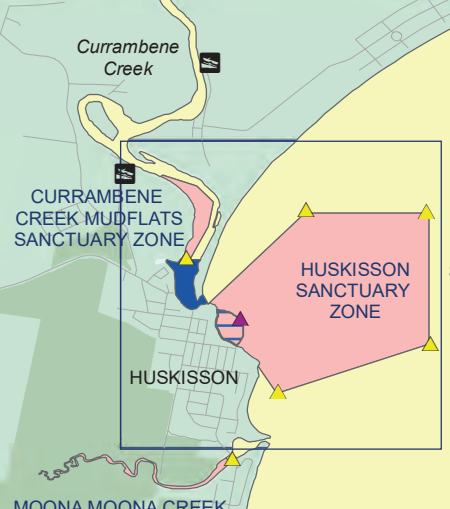
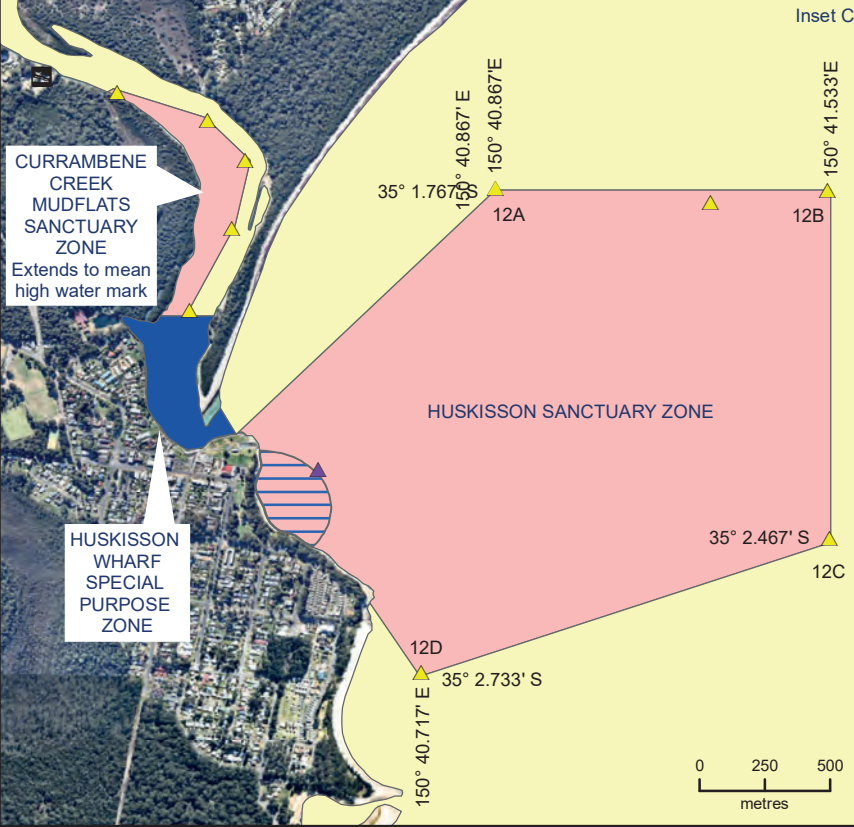
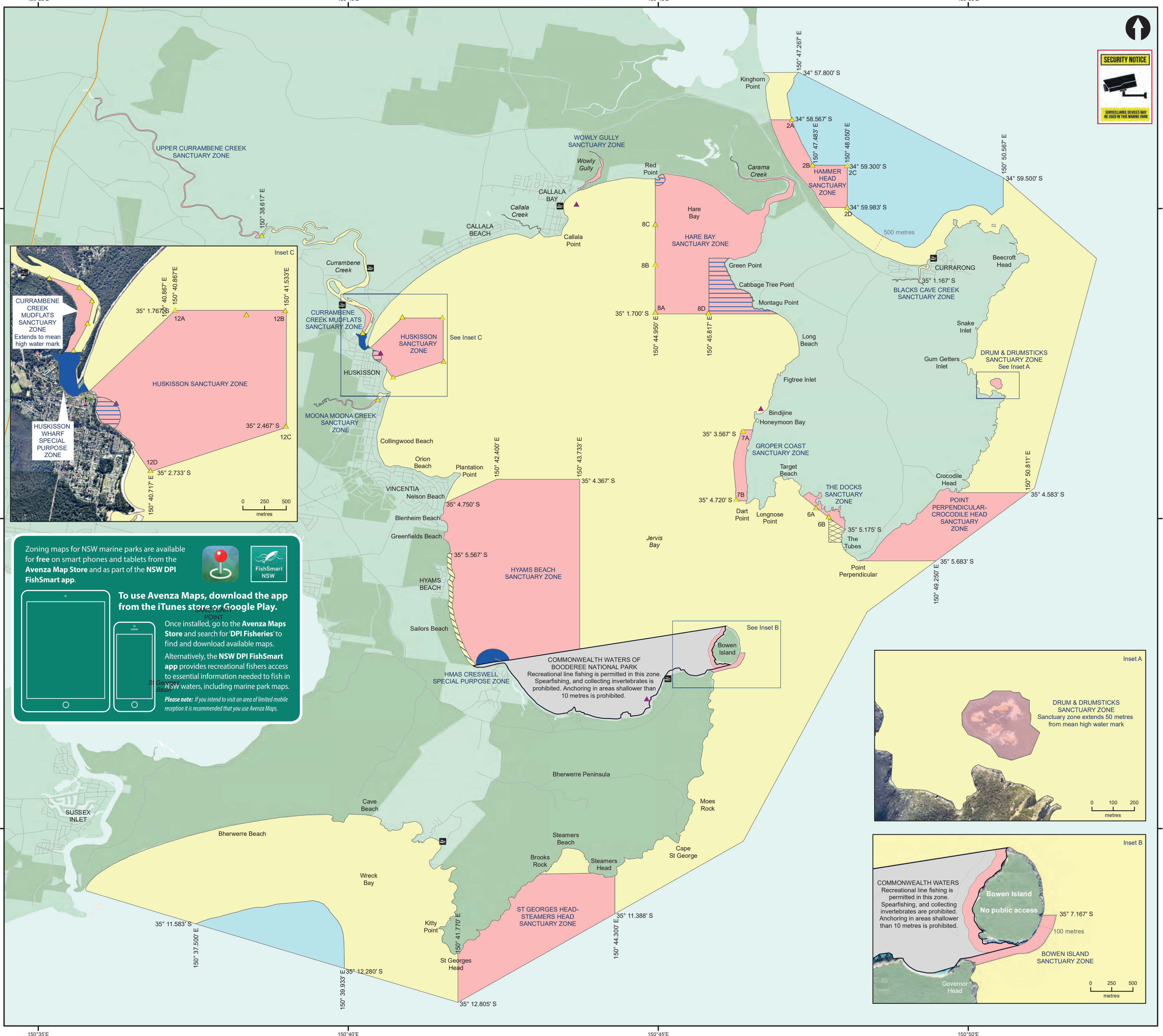
Map Projection: Unprojected Geographic. Horizontal Datum: Geodetic Datum of Australia (GDA94) 1:75000 @ A2. Updated 2020.

- Sanctuary Zone
- Sanctuary Zone (Designated Anchoring Area)
- Habitat Protection Zone
- Habitat Protection Zone (No Spearfishing)
- Habitat Protection Zone (No Anchoring November to April)
- General Use Zone
- Special Purpose Zone
- Public Mooring (Conditions apply)
- Sanctuary Zone Marker
- Boat Ramp

Activity	Sanctuary Zone	Habitat Protection Zone	General Use Zone	Special Purpose Zone
Recreational fishing*				
Line fishing	X	✓	✓	✓
Trapping	X	✓	✓	✓
Spear fishing	X	✓ (a)	✓	✓ (a)
Netting	X	✓ (b)	✓	✓ (b)
Boating and Water Craft				
Recreational boating	✓	✓	✓	✓
Personal water craft	X (c)	✓	✓	✓
Anchoring	X (d)	✓	✓	✓
Hovercraft	P	P	P	P
Scuba Diving and Snorkelling				
Recreational	✓	✓	✓	✓
Collecting				
Collecting (scientific/education)	P	P	P	P
Collecting for aquariums (private)*	X	P	P	P
Collecting for aquariums (commercial)	X	X	X	X
Collecting (recreational: bait, shellfish etc)*	X	✓ (e)	✓	✓ (e)
Competitions				
Line fishing/spear fishing	X	P	P	P
Surfing/Sailing	P	P	P	P
Commercial Fishing*				
Trawling	X	X	✓	X
Beach hauling/garfishing	X	✓ (f)	✓	X
Purse seine netting (non-saleable only)	X	X (f)	✓	X
Setline/dropline	X	X	✓	X
Longlining (surface and demersal)	X	X	X	X
Estuary mesh netting	X	X	X	X
Line fishing	X	✓	✓	✓
Hand gathering (pipis and beach worms)	X	✓	✓	✓
Spanner crab netting	X	✓	✓	✓
Crab trapping	X	✓	✓	✓
Lobster trapping	X	✓	✓	✓
Fish and eel trapping (maximum of 10 traps)	X	✓	✓	✓
Lift netting for bait (non-saleable only)	X	✓ (f)	✓	X

- ✓ Activity allowed
- X Activity prohibited
- * Requires NSW Fishing licence or permit under the Fisheries Management Act
- P Marine Parks Permit required
- (a) Spearfishing is prohibited in all creeks and in the Hyams Beach Habitat Protection Zone
- (b) Recreational nets permitted for the taking of prawns and crabs in habitat protection zones and special purpose zones are the scoop, landing, scissor (push) or hoop (lift) nets.
- (c) Personal watercraft are allowed to traverse sanctuary zones directly to and from the point of launching only, at a maximum speed of ten knots
- (d) Anchoring is restricted to designated anchoring areas in some sanctuary zones, see map. Anchoring is allowed in any zone in an emergency where necessary to protect life or property
- (e) Restrictions apply to the species that can be collected, see user guide
- (f) Is limited to a specific area. The number of permits is strictly controlled. Permits are non-transferable

THIS MAP IS NOT TO BE USED FOR NAVIGATION



Zoning maps for NSW marine parks are available for free on smart phones and tablets from the **Avenza Map Store** and as part of the **NSW DPI FishSmart app**.

To use Avenza Maps, download the app from the iTunes store or Google Play.

Once installed, go to the **Avenza Maps Store** and search for 'DPI Fisheries' to find and download available maps. Alternatively, the **NSW DPI FishSmart app** provides recreational fishers access to essential information needed to fish in NSW waters, including marine park maps.

Please note: If you intend to visit an area of limited mobile reception it is recommended that you use Avenza Maps.

