

CONSULTATION INFORMATION PACK

Application for authorisations under the *Aboriginal Act 1988* (SA)

Younghusband Peninsula Research Project

- Primary Applicant:** Professor Patrick Hesp of Flinders University
- Application Type:** Authorisations under sections 21, 23 and 29(1)(b) of the *Aboriginal Heritage Act 1988* (SA)
- Application Areas:** Six nominated research zones on the Younghusband Peninsula that fall within, or partially within, the Coorong National Park, South Australia (as shown in Attachments 1-6)
- Proposed Activities:** Geomorphological (landform) investigations, including the use of a drill rig to collect sub-surface samples, and archaeological investigations including the identification, recording, excavation and collection of samples from archaeological sites. Samples would also be removed from the state for destructive and non-destructive scientific analyses.

Figure 1 - Image of the Parnka Point Application Area (image courtesy of the Applicant)



INTRODUCTION

The Minister for Aboriginal Affairs (Minister), who is responsible for the *Aboriginal Heritage Act 1988* (SA) (Act), has received an application for authorisations under sections 21, 23 and 29(1)(b) of the Act from Professor Patrick Hesp of Flinders University (Applicant). While Professor Hesp is the primary applicant, eight other academics and researchers are listed as co-applicants (see page 14 “Scope of Authorisations Sought” section below).

Under the Act, authorisations under sections 21 and 23 of the Act are required to excavate, uncover, damage, disturb or interfere with Aboriginal sites, objects or ancestral remains (together, Aboriginal heritage). Authorisation is also required under section 29(1)(b) of the Act to remove an Aboriginal object from the state.

The Applicant proposes to undertake geomorphological¹ and archaeological investigations along the Younghusband Peninsula, which would include excavations and the collection of geomorphological and archaeological samples (Research Project). Also known as the “*Evolution, Geomorphology, Age Structure and Dynamics of the Younghusband Peninsula Holocene Coastal Barrier* - ARC Council Grant No. DP220102926”, the Research Project would be a collaborative study between Flinders University and Ngarrindjeri Aboriginal Corporation RNTBC (NAC). NAC represents the Ngarrindjeri people’s native title rights and interests.

The Research Project would focus its activities on six separate research zones on the Younghusband Peninsula that fall within, or partially within, the Coorong National Park, South Australia, approximately 130 km southeast of Adelaide (together, Application Areas). Figure 2 shows the general location of the Application Areas. Attachments 1 through 6 show the Application Areas in further detail, marked in orange.

The locations of these Application Areas have been selected on the basis of previous heritage surveys that identified areas of exposed archaeological materials as far back as 1981.

The Applicant advises that the Research Project has two key aims:

- to investigate the evolution of sand dunes and other coastal landforms within the Younghusband Peninsula
- to better understand how Aboriginal people of the Coorong used, interacted with and were influenced by the environment prior to and at the time of European settlement.

The Applicant advises that the Research Project would not conduct research on any human remains. All endeavours would be made to avoid ancestral skeletal remains.

The Applicant advises that, if the authorisations are granted under the Act, the Research Project would commence in October 2023 and continue through to December 2025.

Prior to considering whether to grant an authorisation, section 13 of the Act requires the Minister to understand and consider the views of a range of interested Aboriginal parties. Aboriginal Affairs and Reconciliation (AAR) conducts this consultation on the Minister’s behalf, seeking the views of Traditional Owners, the State Aboriginal Heritage Committee (Committee) and other Aboriginal parties that the Minister considers may have an interest in the matter.

Most of the information in this document has been provided by the Applicant and adapted by AAR.

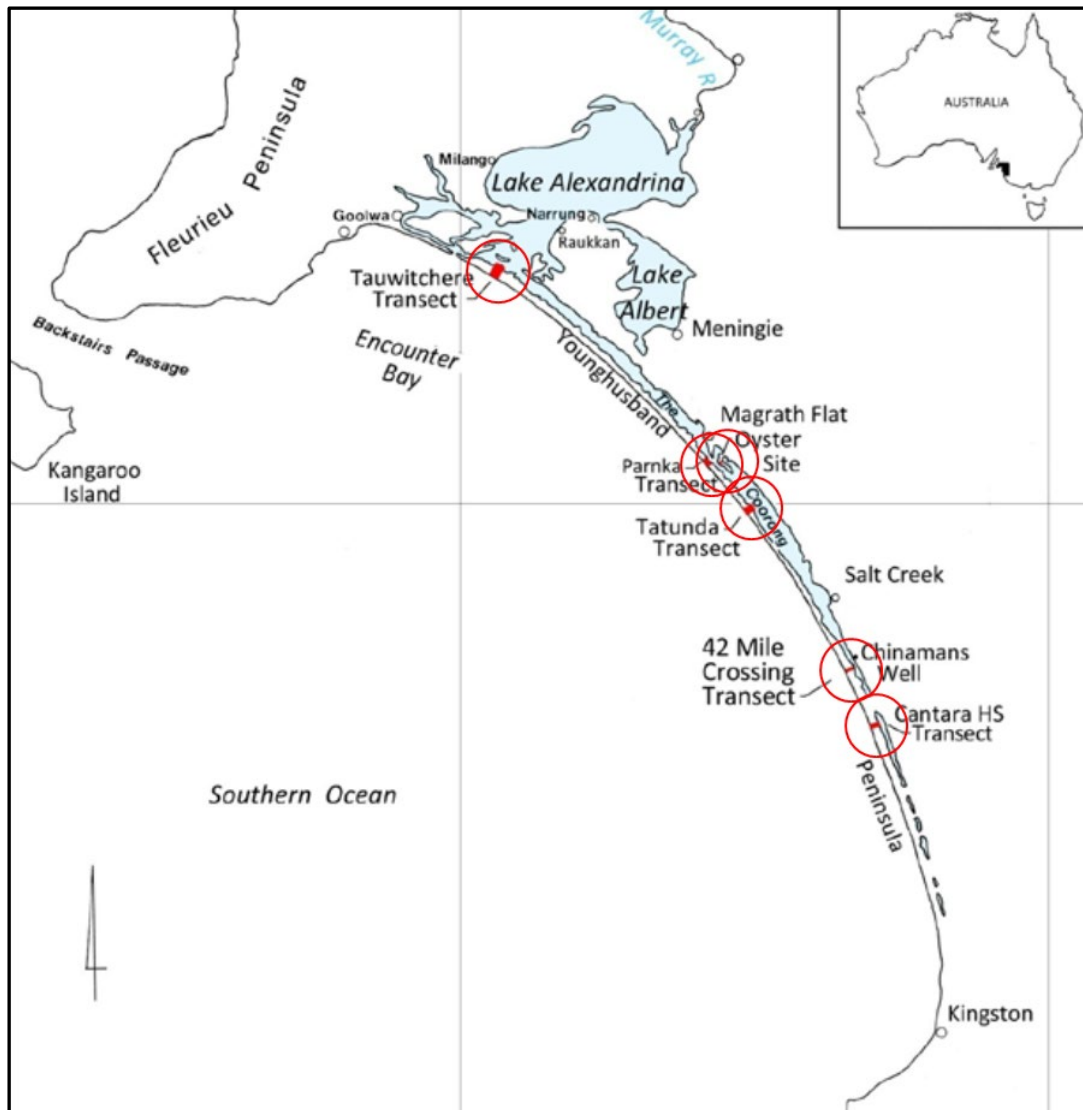
¹ Geomorphology describes the study of landforms, their origins, and how they change over time.

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Table 1 – General location and area of each Application Areas as described by the Applicant.

Application Area	General Location	Area (m ²)
Tauwitchere	Coorong National Park	7,176,220
Parnka Point	Coorong National Park	2,363,876
Oyster Site, Hacks Point	near Magrath Flat, Meningie	3,947,616
Tatunda	Coorong National Park	2,300,755
42 Mile Crossing	Coorong National Park	1,074,452
Cantara	Coorong National Park	3,598,980

Figure 2 – Indicative map of the Application Areas (courtesy of the Applicant). Note the Application Areas depicted in Figure 2 are referred to by the Applicant as “transects”.



ABORIGINAL HERITAGE

Central archives information

AAR's central archives contain records for 32 Aboriginal sites within three of the six Application Areas. Of these 32 sites, 15 are determined Aboriginal sites listed on the Register of Aboriginal Sites and Objects (Register), a subset of the central archives.

See Table 2 through Table 7, and the accompanying written descriptions below each table, for information held on the central archives about Aboriginal heritage intersecting the Application Areas. AAR also notes that the central archives are not an exhaustive record of Aboriginal heritage in South Australia. Unrecorded Aboriginal heritage is very likely to exist within the Application Areas.

*Table 2 - Aboriginal heritage sites on AAR's central archives within **Tauwitchere***

Site Number	Site Name	Site Status	Site Type
6626 – 5539	Rarawaghr Midden 1	Listed	Archaeological
6626 – 5540	Rarawaghr Midden 2	Listed	Archaeological
6626 – 5541	Tauwitchere Point Midden 1	Listed	Archaeological
6626 – 5542	Tauwitchere Point Midden 2	Listed	Archaeological
6626 – 5543	Tauwitchere Point Midden 3	Listed	Archaeological
6626 – 5544	Panmurung Point Midden 1	Listed	Archaeological
6626 – 5545	Panmurung Point Midden 2	Listed	Archaeological
6626 – 4727	Meeting of the Waters	Determined	Cultural
Total number of central archives sites: 8			

According to the central archives, the archaeological sites near the Coorong foreshore within the Tauwitchere Application Area are notably denser than those found in the southern Coorong. Middens in this area may be the remains of day camps used by shellfish gatherers.

South-eastern portions of site 6626-4727 intersect the Tauwitchere Application Area. The *Meeting of the Waters* site is culturally significant to Ngarrindjeri women in particular. It concerns the waters of the Murray Mouth and the cultural importance of tidal flows in this area. The cultural significance of the site also scopes in Aboriginal ancestral burial sites that have been identified on the foreshores of the Murray and associated waterways.

*Table 3 - Aboriginal heritage sites on AAR's central archives within **Parnka Point***

Site Number	Site Name	Site Status	Site Type
6726 – 1393	Hells Gates 1 – Shell Midden	Determined	Archaeological
6726 – 1394	Hells Gates 2	Determined	Archaeological
6726 – 1398	Hells Gates 3	Determined	Archaeological
6726 – 1399	Hells Gates 4	Determined	Archaeological
6726 – 1400	Hells Gates Shell Midden 5	Determined	Archaeological
6726 – 1401	Hells Gates 6	Determined	Archaeological
6726 – 1402	Hells Gates Shell Midden 7	Determined	Archaeological
6726 – 1403	Hells Gates Shell Midden 8	Determined	Archaeological
6726 – 1404	Hells Gates Shell Midden 9	Determined	Archaeological
6726 – 1405	Hells Gates Shell Midden 10	Determined	Archaeological
6726 – 1406	Hells Gates Shell mound Midden 11	Determined	Archaeological
6726 – 1407	Hells Gates Shell Midden 12	Determined	Archaeological
6726 – 1854	Hells Gates 16	Determined	Archaeological
6726 – 1855	Hells Gates 17	Determined	Archaeological
Total number of central archives sites: 14			

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Central archives records describe the sites within the Parnka Point as variously being shell mounds and linear middens. Some sites display historic artefacts due to the proximity of Hack's House, a 19th century stone structure. The archaeology present within the Application Area spans between the Early Prehistoric (6,000-4,500 years before present (BP)) period and the Historic Pastoralist (1895-1950) period.

*Table 4 – Aboriginal heritage sites on AAR's central archives within **Oyster Site, Hacks Point***

Site Number	Site Name	Site Status	Site Type
Total number of central archives sites: NIL			

*Table 5 – Aboriginal heritage sites on AAR's central archives within **Tatunda***

Site Number	Site Name	Site Status	Site Type
Total number of central archives sites: NIL			

*Table 6 – Aboriginal heritage sites on AAR's central archives within **42 Mile Crossing***

Site Number	Site Name	Site Status	Site Type
Total number of central archives sites: NIL			

*Table 7 – Aboriginal heritage sites on AAR's central archives within **Cantara***

Site Number	Site Name	Site Status	Site Type
6825 – 4827	Cantara Midden & Burial	Listed	Archaeological/Burial
6825 – 4828	Cantara Midden 2	Listed	Archaeological
6825 – 5503	Cantara Midden 3	Listed	Archaeological
6825 – 5504	Cantara Midden 4	Listed	Archaeological
6825 – 5505	Cantara Midden 5	Listed	Archaeological
6825 – 5506	Cantara Midden 6	Listed	Archaeological
6825 – 5507	Cantara Midden 7	Listed	Archaeological
6825 – 5508	Cantara Midden 8	Listed	Archaeological
6825 – 5510	Cantara Midden 10	Listed	Archaeological
6825 – 5511	Cantara Midden 11	Listed	Archaeological
Total number of central archives sites: 10			

Site 6825-4827 is described as extensive midden material over 300 metres, with evidence of 13 hearths and a lithic artefact scatter. At the time of recording, exposed incomplete Aboriginal ancestral remains were reported. In accordance with the wishes of Ngarrindjeri Traditional Owners, the remains were collected and reburied in an area of vegetated dune on the eastern margin of the site. It is unclear if the reburial location is mapped.

The remaining sites within the Application Area are a mix of small to large midden scatters, some involving individual discrete middens within the scatters.

Attachments 1 through 6 are maps of the Application Areas that depict the known Aboriginal heritage listed in Table 2 through Table 7.

Please note that geospatial records held on AAR's central archives vary in accuracy. Many site locations were recorded prior to modern GPS technology. The precise location, full geographic extent, or on-ground orientation of Aboriginal heritage sites may not be reflected accurately on the attached maps. For these reasons, site information depicted on the attached maps should be considered indicative only. AAR advises that many site records depicted on the attached maps require archaeological field verification.

Although AAR's central archives only contain records for three of the six Application Areas, the Applicant has provided information relating to Aboriginal heritage in all six Application Areas. As such, AAR understands that all of the Application Areas intersect Aboriginal heritage.

INFORMATION PROVIDED BY THE APPLICANT ON ABORIGINAL HERITAGE WITHIN THE APPLICATION AREAS

Previous heritage surveys

Systematic heritage surveys have identified a wide range of 'cultural discard centres' (i.e. areas containing archaeological evidence of Aboriginal use and/or occupation) spanning the last ~6,000 years of habitation in the Tauwitcherie, Parnka Point (Hacks Farm) and Cantara Application Areas, and a targeted survey has recorded older discard centres in the Tatunda and Oyster Site, Hacks Point Application Areas.

Dr Roger Luebbers, who would be a Heritage Advisor on the Research Project, has surveyed the Application Areas. The following reports inform much of the contemporary knowledge of the Aboriginal heritage within the Application Areas:

- R.A. Luebbers, 1981 (rev. 2016) *The Coorong Report: An Archaeological Survey of the Southern Younghusband Peninsula* (1981 Report)
- R.A. Luebbers, 1982 (rev. 2016) *The Coorong Report: An Archaeological Survey of the Northern Coorong* (1982 Report)
- Roger Luebbers, 1996 (rev. 2015) *The Archaeology of Chinamans Wells and Hacks Station: The Coorong South Australia* (2015 Report).

Tauwitcherie

The 1982 report says that the Tauwitcherie Application Area is located 7.5 km from the Murray Mouth, making it the northernmost Application Area.

Prior to barrage construction in the 1930s, the area formed part of an extensive estuarine system created by an exchange of water from the Murray River and the Coorong during tidal changes.

The Application Area was surveyed for archaeological sites in 1982 to identify site distribution around the Coorong shoreline and the coastal foreshore. Site dimensions and content were noted but areas were not systematically searched for cultural heritage deposits.

Aboriginal sites near the foreshore are typically large dense shell middens containing cockle, hearths and lithic tools. Many retain small, undisturbed remnants from which detailed content descriptions could be made.

Several types of middens occur in the vicinity of the Coorong shore. Most are single-shell layered linear middens. In addition to cockle, they contain proportions of crab, freshwater lobster or fish, suggesting short term residency on the midden itself.

A pair of earthen mounds in the upper beach zone on the western shore has parallels with shell mounds in the Southern Coorong. The large proportion of cooking stones and charcoal and low representation of molluscs suggests that non-marine foods were being processed in the kitchen. The Applicant proposes that camps were repeatedly occupied by clan groups, possibly with plant preparation/processing as a major activity. Nets may have been made on site, making fish and birds an important dietary element.

Site distribution patterns in the Tauwitchere Application Area indicate that both the Coorong shore and ocean beaches were major resource zones in which habitation took place. However, site contents do not reflect pronounced patterns of intensive site use. This may be the result of limited search time, or that main camps are located outside the Application Area at traditional crossing points with easy access across shallow water. At the location of the Tauwitchere Application Area, the Applicant suggests that seasonal clan movements must have involved navigating deep water or relying on arrangements with neighbours to allow shallow crossings. Either way, the Aboriginal heritage that exists was likely influenced by access to watercraft.

Parnka Point

The 1982 report includes information on the Parnka Point Application Area, located at Hells Gates at the juncture of the two major drainage basins in the Coorong lagoon, approximately 23 km south-east of the Murray Mouth.

Parnka Point refers to a high sandhill that Traditional Owners used historically as a lookout. It was a major crossing place for travellers on the coast coming from either direction. There is a track within the Application Area that coincided with the boundary between the Kanmere (northern) and Ngarrindjeri clan territories of the Tanganekald, according to Milerum as reported by Norman Tindale. Parnka Point is a site of significance for Ngarrindjeri people. There is anecdotal evidence that the area may have been used as a traditional cemetery.

The majority of cultural sites in the Application Area occur in the lee of the foreshore and on the floodplain of the Coorong lagoon. The coast sites have been significantly disturbed, making it difficult to determine their original boundaries.

The Application Area has been impacted by pastoral activity since the 1850s. It is the location of the 19th century Hack's House and there is evidence of a quarry to source limestone for building construction. There are remnant house gardens, as well as a water drain.

Site detection in the floodplain was achieved through visual methods, and the use of a steel probe designed to extract a continuous soil column up to 1.3 m deep to locate and measure sub-surface deposits.

During the survey, site 6726-1399 was excavated using trenches. The shell mound is adjacent to a waterhole that was filled by groundwater. The shell mound is a sharply defined large concentration of habitation refuse that may suggest residency of a comparatively large population. There is a shallow depression on the site's summit suggesting a wurley may have once stood there.

Excavation of site 6726-1399 revealed four major depositional layers, indicating that the site had been in use from as early as 6,000 BP through to the time of the pastoralists.

The shell mound also revealed a disturbed ancestral burial complex containing the remains of two adults. It was surmised that the disturbance had occurred unintentionally sometime in the last 150 years.

The report concludes that further research is required to understand patterns of occupation at various periods of settlement to understand better how the shell mound was formed. Site 6726-1400 was also excavated. The shell midden intersects with the stone footings of Hack's House. The site was investigated to understand Aboriginal occupation of the Application Area.

The 1982 report concludes that the archaeology present within the Application Area spans between the Early Prehistoric (6,000-4,500 years BP) period and the Historic Pastoralist (1895-1950) period. Most farm installations are built on top of major Aboriginal shell mounds that could have been occupied in the early 19th century.

The 1996 report includes the findings from a 1983 field program to identify the remains of Hack's House and to determine the relationship of farm activity to Aboriginal residency patterns. An auger survey and excavation were used to compile a site plan for the historic dwelling and associated structures that intersect site 6726-1400. The boundaries of the underlying shell midden were not recorded.

Oyster Site, Hacks Point

A single deposit of the native mud oyster (*Ostrea angasi*) was found in this Application Area. A sample from the deposit has been dated at ~6,000 BP, appearing to represent a mid-Holocene² marine phase in the Coorong lagoon. This is the only midden containing this species currently reported for the Coorong.

Tatunda

An unreported targeted survey has located an assortment of discrete saltwater clam (*Donax*) and blue mussel (*Mytilus* spp.) deposits and clusters of heated calcrete stones on a wind-eroded surface within the Application Area. This assemblage, which has not been recorded or dated with precision, is a rare and possibly the oldest example of shellfish harvesting of the two species being discarded at the same locality in the earliest phase of Aboriginal habitation of the area.

42 Mile Crossing

No survey report is available for this Application Area. However, field observations indicate that middens were once prolific on a 4-wheel drive track that bisects the Application Area east to west. The middens are now in an advanced state of deterioration from weathering and have been damaged by off-road vehicles and coastal erosion. Evidence of weathering of shell surfaces and sedimentary position near the dune summit mid-way across the barrier suggests that some middens may represent an old phase of occupation that has not already been recorded and dated.

Cantara

The 1981 report covers the known Aboriginal heritage sites within this Application Area.

The greatest number of sites is located in the comparatively narrow zones behind the foredune and along the lagoon margins, with a lower number occurring midway between the two shorelines.

Three types of habitation sites appear in the estuarine corridor and are suspected of representing many phases of Aboriginal settlement that, when ordered chronologically, appear to describe a shift toward a more intensive use of the Application Area and larger resident populations.

Almost all middens contain mollusc shell remnants and range in size from about 4 m across to over 300 m. Contrasts in size, distribution patterns, faunal composition and preservation evidence mark differences in settlement strategies and the age of occupation.

² The Holocene is the name for the current geological epoch and includes the present day. It began approximately 11,700 years ago.

Site 6825-4828 is a large mollusc midden that represents a phase of intensive occupation unsurpassed in the archaeology of the Coorong. The site comprises at least six large shell mounds. The mounds also contain flint flakes, red ochre and charred calcrete stone. Two sets of deteriorated ancestral remains were reported on the midden surface.

Two sample areas of site 6825-4828 were excavated in layers, with the excavated material then sieved.

Wood charcoal radiocarbon samples were individually collected from each of the excavations and submitted for age determination. The lower layer sample was dated at 5,545-140 BP, making the site the oldest then known on the Coorong. The age of the upper layer sample was 4,520-110 BP.

DETAILS OF THE RESEARCH PROJECT

Background and aims of the Research Project

The Applicant advises that the Research Project has two key aims:

- **Geomorphological** - to investigate the patterns of coastal evolution, including dune erosion, dune migration, shoreline change and wetland development, within the Younghusband Peninsula from the beginning of the Holocene through to the present day
- **Archaeological** - to better understand how Aboriginal people of the Coorong used, interacted with and were influenced by the environment prior to and at the time of European settlement.

To achieve the aims of the Research Project, the Applicant proposes to extract and study sub-surface dune material (geomorphological samples), as well as target midden sites for archaeological recording, excavation and the collection of shell, charcoal, bone, ash, plant material and artefacts for analysis. Scientific analysis of both the geomorphological and archaeological samples is also proposed, including at international scientific testing institutions.

The Applicant says that the Research Project would also involve the synthesis of Ngarrindjeri oral histories and the examination of archival documentation from the mid-18th to mid-19th century to *“identify possible correlations in cultural responses to landform changes for the full period of Holocene habitation”*. The Applicant advises that previously recorded historical accounts will also be examined to provide insights into “Ngarrindjeri lifeways”. The Applicant does not propose to record new oral histories as part of the Research Project.

AAR understands that the Department for Environment and Water has issued the Applicant with a permit to undertake scientific research for the Research Project.

SCOPE AND METHODOLOGY OF THE RESEARCH PROJECT

The Applicant advises that the Research Project would involve a range of research techniques, methods and activities. Some, none or all activities detailed below may be carried out in each Application Area. Research Project activities would include:

Preliminary assessment and investigations

Pedestrian surveys

The Applicant advises that the Research Project would involve pedestrian surveys of the Application Areas in the vicinity of recorded cultural discard centres. The surveys would involve the recording of Aboriginal heritage that may be relevant to the Research Project. The Applicant advises that these

surveys are “*considered necessary to update locations and status of cultural deposits that may have changed or disappeared when they were last recorded four decades ago*”. It is envisioned that the coverage of pedestrian surveys may extend beyond the recorded boundaries of known heritage within each Application Area.

Drone mapping

The Applicant advises that the Research Project would involve the use of a drone to map selected areas in each of the Application Areas. The Applicant says that the maps obtained from the drone photography would provide “*high-quality documentation*” of midden locations which would be used to inform and update site records that would be lodged with AAR for inclusion into the central archives.

LIDAR

Light Detection and Ranging (LIDAR) is a method of determining distances by targeting an object or a surface with a laser and measuring the time it takes for the reflected light to return to the receiver. The Applicant is proposing to use LIDAR methods to locate and record Aboriginal heritage in Application Areas where there is dense vegetation on the ground.

This method of investigation can create high-resolution three-dimensional models of the ground with a vertical accuracy of 10 cm. LIDAR imagery would primarily be used to identify likely cultural discard centres in the Tatunda and Parnka Point Application Areas, which will inform archaeological sampling locations. The Applicant advises that LIDAR utilises airborne photographic recording techniques and would not cause ground disturbance.

Ground Penetrating Radar (GPR)

GPR is a technique that uses radar to image/scan the underground environment. The Applicant is proposing to use a GPR unit that “*emits radar pulses while it is dragged or driven across the surface while recording signals from below the ground surface*”.

The Applicant says that this technique would be used to detect “*structures, voids, and objects but without harm to cultural materials or any other material*” and that “*GPR is ideally suited to operate in dune fields to detect anomalies which can be exposed and recorded as cultural materials*”.

The Applicant advises that GPR would be undertaken primarily in the Tauwitchere, Cantara, 42 Mile Crossing, and Parnka Point Application Areas to locate buried sand surfaces and soil structures. GPR may also be used to locate buried middens in the Tauwitchere Application Area, where possible.

The Applicant advises that GPR operation would involve rolling a lightweight recording unit across the dune surface in a way that may impact cultural heritage present on the surface. A heritage advisor would supervise all GPR usage to ensure that no heritage materials are present on the surface prior to using the GPR unit. The Applicant advises that its GPR unit would not penetrate below the dune surface and so would not harm sub-surface heritage materials.

Geomorphological drilling and auguring

Use of a drill rig (Geoprobe brand)

The Applicant is proposing to use a drill rig (Geoprobe brand) to collect sediment samples up to a maximum depth of 20 m below the ground surface using a 65 to 100 mm diameter drill bit (Figure 3). The Applicant describes the drill rig as a heavy tracked vehicle with a drill attachment. The

diameter of the drill bit used to obtain soil samples is considered by the Applicant to be small enough to pose minimal risk to heritage materials below the surface. The Applicant advises that the drill rig would be mounted on a trailer and transported to specific drill areas as required.

The drill rig will be used to collect earth (sand) and other materials for radiocarbon dating and optically stimulated luminescence (OSL) dating (see below for a description of both methods). The Applicant advises that it is seeking to use the drill rig to collect samples as it is the *“most advanced geotechnical method for penetrating dune structures to acquire samples pertaining to the full extent of the Holocene profile above sea level”*.

Operation of the drill rig may inadvertently damage cultural materials on and near the dune surface. Prior to the operation of the vehicle, its route across the dune surface will be planned to avoid heritage materials that are visible on the surface. However, the Applicant advises that the drill rig may nonetheless encounter Aboriginal heritage below the ground surface.

The Applicant advises that the drill rig (Geoprobe) would primarily be used in the following Application Areas: Tauwitschere, Parnka Point and 42 Mile Crossing.

Figure 3 – Image of a drill rig in use (courtesy of the Applicant)



Use of a hand auger and removal of soil samples

The Applicant advises that hand augers (drills) would also be used to expose sub-surface sediments, to a maximum depth of 4 m. PVC pipe (or equivalent) would then be inserted into the newly created hole and hammered into the dune material to collect samples without exposing them to sunlight. It is anticipated that the PVC pipe (or equivalent) would be around 50 mm in diameter, and would be hammered to depth of approximately 30 cm.

Archaeological excavations and collection of samples

Archaeological excavations

If authorised, the Applicant would excavate cultural materials from within all six of the Application Areas. AAR understands that the extent of excavation the Applicant would undertake may vary across the six Application Areas depending on the amount of Aboriginal heritage present and environmental conditions.

In describing the proposed excavation methodology, the Applicant says that cultural materials, *“consisting of shell, charcoal, bone, ash, plants and other artefacts considered to have a cultural origin, will be removed by controlled hand excavation for [subsequent] identification and analysis”*.

Proposed methods for obtaining archaeological samples

Applicant proposes to undertake two methodologies to obtain archaeological samples from the Application Areas for subsequent scientific testing. The two methodologies are:

- **Material-specific sample collection** – small quantities of a single type of cultural material would be collected for identification, dating and analysis. Typically, these would be shells or charcoal or other organic material. Approximately 30-40 material specific samples will be collected by the Research Project, in total.
- **Matrix sample collection** – up to 20 litres of cultural materials – which may include shells, charcoal, and surrounding sediments – will be collected and studied to identify the types of natural and cultural materials that are present in a given archaeological deposit. Matrix samples will be processed (i.e. sieved) in the field. Materials that pass through the sieving process (i.e. the finer fraction) would be returned to the heritage deposit from which it was obtained. An estimated 5-8 matrix samples (each up to 20 litres in volume) are expected to be collected during the Research Project.

Scientific dating and analysis of geomorphological and archaeological samples

Optically stimulated luminescence (OSL)

OSL testing is a technique used to analyse earth (sand) particles (particularly their crystal structure) to determine when they were last deposited. This non-destructive technique determines the last time a sediment sample/mineral was exposed to heat/daylight.

The Applicant says that the OSL method of testing is to determine the *“antiquity of sedimentary build up in dune sections where radiocarbon or other organic samples are not available for dating”*.

The Applicant advises that OSL samples obtained during the Research Project are expected to occur above or below heritage materials. The OSL samples themselves would not contain cultural material.

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The Applicant advises that the collection of samples for OSL testing would be undertaken by experienced practitioners trained in collecting OSL samples and processed by an accredited laboratory at the National Institute of Advanced Industrial Science and Technology, Japan.

The Applicant says the collection of OSL samples would only occur in the Tauwitchere, Parnka and 42 Mile Crossing Application Areas.

Radiocarbon dating

Radiocarbon (C-14) dating is a scientific method used to determine the age of organic materials up to 45,000 years old.

The Applicant says that it would collect the following organic samples for radiocarbon dating from any of the six Application Areas: charcoal, fibrous plants, mollusc shell and faunal remains. The Applicant advises that an ideal sample size for radiocarbon dating ranges between 2-40 grams in weight. Radiocarbon testing is a method that typically results in the destruction of the entire sample.

The Applicant advises that any samples selected for radiocarbon dating would be individually sealed in labelled bags and may be subjected to low heat drying to reduce fungal growth during transportation to the laboratory. Samples collected for radiocarbon dating would be scientifically tested by Beta Analytic, a scientific laboratory situated in Miami, USA.

Electrical resistivity tomography (ERT)

ERT is an advanced geophysics method used to determine sub-surface soil density. This is done by taking electrical measurements using electrodes that are inserted into the ground. ERT interpretations, when supported by other geophysical data, can accurately represent the density of “geologic formations” under the ground. ERT would be deployed primarily in the Tauwitchere, Parnka Point, and 42 Mile Crossing Application Areas. The Applicant advises that the ERT method is not anticipated to impact Aboriginal heritage.

Bioarchaeology

The Applicant says that it would also study animal (faunal) remains to understand the past dietary behaviour of Aboriginal people living in the Coorong.

Reporting

The Applicant advises that at the conclusion of the proposed Research Project works, documentation and research data would be issued to NAC and other interested Aboriginal community members. Where relevant to cultural heritage research on Ngarrindjeri Country, Ngarrindjeri participants in the Research Project would be invited to co-author publications or other forms of public communications.

The Applicant says that it “*values the reporting process as a mechanism to inform cultural custodians of the progress of works and methods undertaken by the project and will endeavour through consultation to establish an effective means to achieve this goal*”. The Applicant envisions that data acquired during the Research Project “*will be disseminated through both formal publication outlets and progress reports generated by project personnel to the community*”.

The Applicant advises that post-graduate researchers would also make use the results of the Research Project. The Applicant would seek to publish the information obtained from the Research

Project in international archaeological and geomorphological journals and via other academic outlets.

Intellectual property rights for journal publications would be retained by Flinders University, the funding body for the Research Project. Intellectual property rights will be held by NAC for other relevant communications, for example progress reports and newsletters.

Aboriginal involvement

The Applicant advises that Ngarrindjeri representatives will be engaged to participate in the Research Project. The Applicant notes that funds have been allocated to NAC to provide support for Ngarrindjeri community participation.

SCOPE OF AUTHORISATIONS SOUGHT

As noted above, the application for authorisations under the Act lists a total of nine co-applicants. These are:

- Professor Patrick Hesp, Lead Researcher and Team Leader, Flinders University (primary applicant)
- Professor Colin Murray-Wallace, University of Wollongong
- Professor Patrick Nunn, University of Southern Queensland
- Professor Sergio Dillenburg
- Adjunct Professor Graziela Miot da Silva, Flinders University
- Adjunct Professor Robert Bourman
- Dr Toru Tamura
- Professor Ian Moffat, Flinders University
- Dr Roger Luebbers, Heritage Advisor.

The Applicant requests that the authorisations, if granted, also extend to:

- Dr Murray Tamer, Beta Analytic Inc. Miami, Florida, USA
- Mr Geoff Ervin, Heritage Advisor
- Mr Hamish Luebbers, Consultant
- Mr Adrien Flament, PhD student, Flinders University
- Mr Mark Reilly, PhD student, University of Southern Queensland.

PROPOSED MANAGEMENT OF ABORIGINAL HERITAGE

The Applicant advises that *“disturbances caused by excavation will be kept to a minimum extent to avoid unnecessary impacts on cultural materials investigated by the [Research Project]. Vehicle movement will be confined to existing tracks and testing equipment will operate only at locations that are free of cultural heritage materials as observed on the surface”*.

The Applicant advises that the collection of samples (as outlined in the “Scope and Methodology” section above) would be no larger than is necessary to complete Research Project objectives.

Where weather conditions permit, matrix samples would be processed in the field and immediately returned to their original location in the landscape to avoid the need for site rehabilitation and lessen subsequent storage requirements.

The Applicant advises that cultural heritage materials - such as shells, faunal remains, charcoal and sediment - would be removed from the Application Areas for analysis and documentation that

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cannot be completed under field conditions. This material would be housed in a secure location at Flinders University, and details of the stored materials provided to NAC and other interested parties. The Applicant says that the *“return to country of all samples collected will be a central objective”* of its discussions with the *“cultural custodians for the study area”*. The size of samples collected from cultural discard centres will be kept to the minimum required to ensure valid testing results and, where appropriate, to establish a faunal reference collection for future comparisons and analysis.

The Applicant is required to report new Aboriginal heritage discoveries to the Minister, via AAR, in line with the requirements of section 20 of the Act.

The Applicant states that every effort will be made to avoid disturbance to ancestral Aboriginal remains; however, if the Research Project works do discover any Aboriginal remains as a result of its activity, all work in the vicinity would stop immediately and SAPOL would be notified in accordance with the *Coroners Act 2003* (SA). If the human skeletal remains are confirmed to be Aboriginal, the Minister (via AAR) and NAC would be notified, and the ancestral remains would be managed by the Applicant’s Heritage Advisors in consultation with NAC.

The Applicant emphasises that human remains would not be disturbed or collected from the Application Areas.

ABORIGINAL ENGAGEMENT

Letter of support

NAC provided a letter of support to the Flinders University Ethics Committee confirming that it supports the Research Project. In supporting the Research Project, NAC’s letter outlines the ways in which NAC will be involved:

- meeting with the Applicant to discuss the oral history relevant to the area
- on-site meetings with the Applicant to examine cultural and archaeological sites
- assisting the Applicant with Research Project activities at archaeological sites.

Community consultation

On 20 March 2023, under the direction of the NAC Chairperson, the Applicant organised a community consultation meeting at the Raukkan Town Hall. More than 32 Ngarrindjeri community members attended the meeting. Attendees included the NAC and Raukkan chairpersons, Elders, rangers and children.

During the meeting, the Applicant presented an overview of the Research Project’s aims and methods. Following the presentation, those present were given the opportunity to ask questions and review maps of the Application Areas.

The Applicant advises that Ngarrindjeri Elders present at the Raukkan meeting *“supported the concept of utilising projects such as this one as a method of regaining cultural memory and knowledge for the benefit of future generations”*.

SECTION 13 CONSULTATION

Invitation for submission from interested parties

Prior to considering whether to grant the authorisations under the Act, section 13 requires the Minister to consult with the Committee, Traditional Owners and any interested Aboriginal parties.

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Accordingly, verbal and written submissions are now invited from such parties. Consultees can make submissions to AAR by phone, letter or email. Anyone in receipt of this consultation information pack is encouraged to share it with others who may also have an interest. This consultation information pack is also available online at: www.agd.sa.gov.au/heritage-applications.

THE DEADLINE FOR SUBMISSIONS IS TUESDAY 5 SEPTEMBER 2023

When making submissions, AAR encourages consultees to consider and answer the following key questions:

- 1. Should the authorisations sought be granted to the Applicant? Why or why not?**
- 2. If the authorisations are granted, what conditions, if any, should be imposed on them?**
- 3. What should the Minister consider when deciding this application?**

Unless otherwise requested, all submissions will be forwarded to the Applicant for comment. Once the public consultation period has closed, all consultation feedback, including any responses to the feedback provided by the Applicant, will be forwarded to the Committee for its review. In light of that information, the Committee's own advice about the application will be sought.

AAR will then collate all feedback, along with its own recommendations, and provide this to the Minister to assist him to make his final decision about the application.

No public meeting will be held. Instead, AAR will endeavour to contact interested Aboriginal parties with a known interest in this Research Project, prior to Tuesday 5 September 2023. AAR is available to answer any questions or provide further information about the application before the consultation period closes.

If you wish to learn more, lodge a submission and/or be notified of the Minister's decision in this matter, please contact:

Ms Tess Mitsoulis
Senior Project Officer (Heritage)
Aboriginal Affairs and Reconciliation
08 8429 9408
AAR.CIR@sa.gov.au
GPO Box 464, ADELAIDE SA 5001

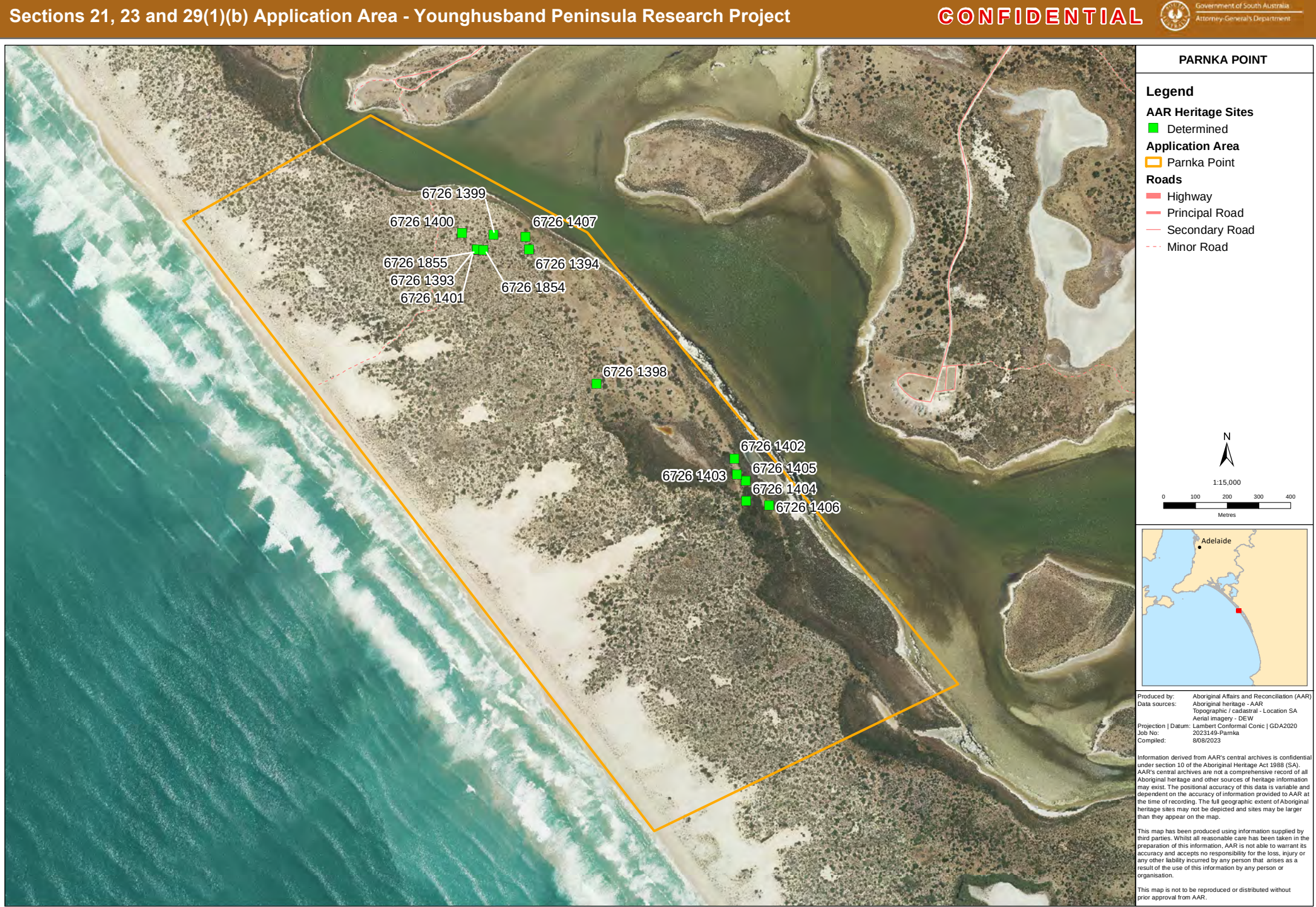
THE SUBMISSION PERIOD CLOSES ON TUESDAY 5 SEPTEMBER 2023

Thank you for taking the time to consider this consultation information pack. If you are an interested Aboriginal party, AAR encourages you to make a submission before the closing date.

Attachments:

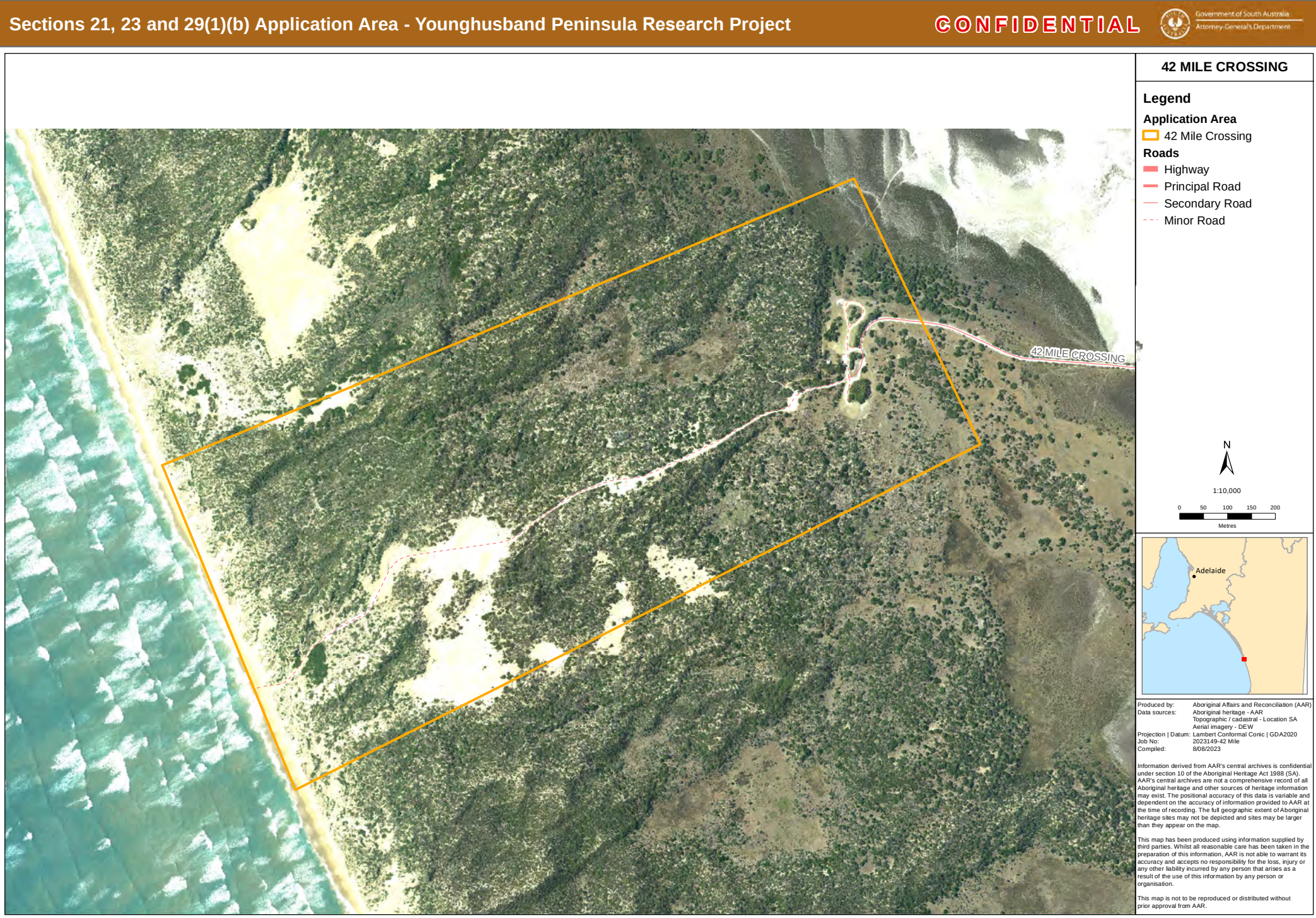
- Attachment 1: Map showing Tauwitcherie Application Area
- Attachment 2: Map showing Parnka Point Application Area
- Attachment 3: Map showing Oyster Site, Hacks Point Application Area
- Attachment 4: Map showing Tatunda Application Area
- Attachment 5: Map showing 42 Mile Crossing Application Area
- Attachment 6: Map showing Cantara Application Area
- Attachment 7: Information provided by the Applicant about the six Application Areas

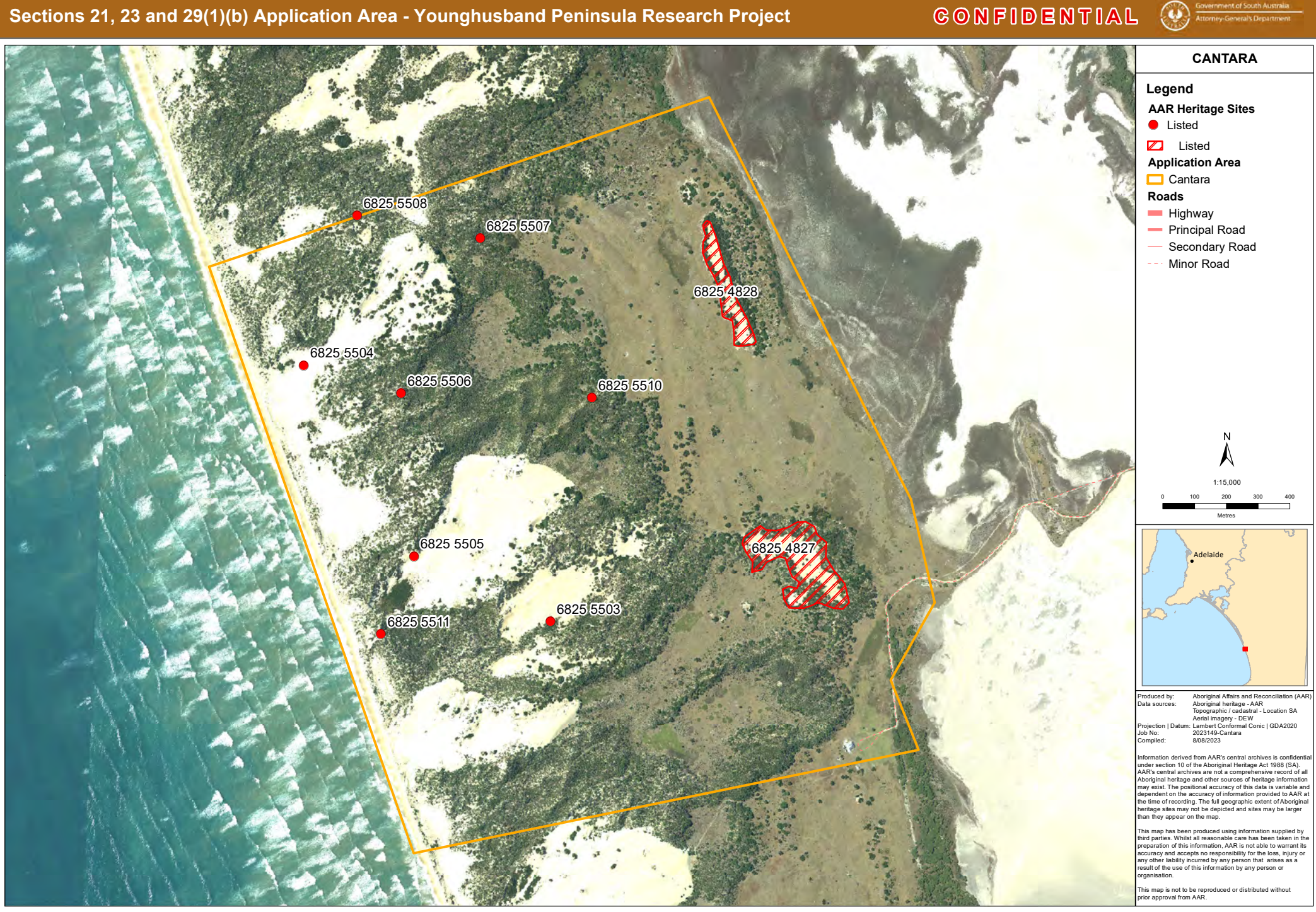












Attachment 7: Information provided by the Applicant about the six Application Areas and proposed activities for each.

If authorised, the Applicant may choose to conduct any or all proposed research activities within each Application Area (see 'Scope and Methodology of Research Project' section of AAR's Consultation Information Pack). However, the information below is a summary of the Applicant's primarily proposed research activities/targets relevant to each Application Area:

Application Area	Research Project focus
Tauwitchere	The Applicant plans to undertake a drilling program in this Application Area using a drill rig (Geoprobe brand). The Applicant is also proposing to conduct archaeological sampling where cultural materials are visible on the dune surface.
Parnka Point	The Applicant intends to excavate the middens located near an historic farmhouse using archaeological sampling techniques. The Applicant is proposing to undertake the archaeological sampling techniques to determine the age of the middens and also determine how long Aboriginal people occupied this area. Parnka Point also contains the remains of a mussel midden that is believed to represent Aboriginal occupation of this area. The Applicant is proposing to conduct scientific testing on the mussel to determine how old it was, and the Applicant is proposing to search for a buried mussel bed near the midden.
Oyster Site, Hacks Point	This Application Area intersects a midden where a species of native mud oyster was previously discovered. The Applicant is proposing to excavate oyster shell from this midden and search for other cultural materials. The Applicant is also seeking to conduct a pedestrian survey to locate similar middens. If the Applicant locates any other middens in this Application Area, it is proposing to conduct radiocarbon dating on all samples collected.
Tatunda	The Applicant proposes to date several of the midden deposits in this Application Area using the radiocarbon dating technique. It is also seeking to conduct a surface survey of the area to map all sites using drone photography.
42 Mile Crossing	The Applicant advises that it plans to search for and date a selection of midden deposits that contain shell material. The Applicant is proposing to conduct a pedestrian survey to locate other datable materials. These sites would be mapped for recording in the central archives.
Cantara	The Applicant is proposing to investigate and record three areas within this Application Area. 1) The lagoon edge: the midden deposits in this area would be photographed using a drone and a selection of the midden deposits would be sampled and dated to establish an occupation history using the archaeological technique of "<i>matrix sample collection</i>" 2) The middens, located on the dune summit located near Cantara homestead, would be searched and dated using the same archaeological sampling technique mentioned above

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	3) Middens that intersect a dune at the ocean front would be targeted for archaeological sample collection, dating and mapping.
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