



## Appendix C

Aboriginal Heritage Survey and Archaeological Survey

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**Alkimos Aboriginal Heritage Survey  
Cultural survey**

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**for Moodjar Consultancy**

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February 2021

## Acknowledgements

We start by saying:

*Nidja Whadjuk Nyoongar boodjar gnulla nyinniny. Nyoongar boordier nidja boodjar kura, yeye, boorda. On behalf of the Development WA and the Moodjar Project Team I would like to respectfully acknowledge that this work was carried out on Whadjuk Nyoongar country.*

**This Report has been Prepared by Moodjar Consultancy for Development WA, February 2021**

The authors would like to thank the following organisations and individuals who helped with the management of this Aboriginal heritage survey:

*Nyoongar* cultural bosses/consultants

Len Collard

Betty Garlett

Narelle Ogilvie

Freda Ogilvie

Dennis Simmons

Phillip Collard

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# Executive Summary

## Project background

Moodjar Consultancy recognises the *Whadjuk* people as the traditional owners of the greater Swan Plain area. For the *Whadjuk* people, these are places that have strong social, spiritual, cultural and historic significance.

The following report provides an account of the *Nyoongar* participants in the survey conducted on the 27<sup>th</sup> and 29<sup>th</sup> of January 2021. The purpose of this report is to identify what, according to *Nyoongar* participants, is significant about the *Nyoongar* cultural heritage of the Alkimos site. As has been set out in the Archaeological Report, there are no registered Aboriginal sites within the survey area. However *Nyoongar* custodians and participants in the survey consider the pinnacles area, a small reed area in the northwest corner of the site and the sand dune systems and wooded area on the eastern reaches of the site to be of *Nyoongar* cultural significance.

## Previous research and surveys

A desktop study was designed to identify and review the literature that captured *Whadjuk* and other *Nyoongar* people's knowledge of any cultural significance of the site and areas of proximity.

The evidence indicates that the study area sits within a region that has long been part of a rich broader culture and ecosystem that provides significant spiritual and physical sustenance to *Whadjuk*. Indeed, it is located in between the ocean and major lake and other water systems that have a vital role in the creation of the world for *Whadjuk*, a part of the interconnected movements of the *Waugyl* as it carried out its task of "making of the streams and waterways" in the *nyittiny* (cold times).

Prior to the colonisation of the areas around Perth and the southwest of WA, the region was well watered, fertile and relatively densely populated by some thirteen or fourteen socio-dialectal groups who today self-identify as *Nyoongar*<sup>1</sup>, see Figure 1.

The term *Nyoongar* (man or people) describes those of Indigenous Australian descent whose forebears occupied *Nyoongar boodjar* (*Nyoongar* land). *Nyoongar boodjar* extends approximately from south of Geraldton, to *Cooroow*, across to the small Wheatbelt town of *Nyoongah*, towards the southern coast around Esperance.

Knowledge of *Nyoongar boodjar* has, from time immemorial, been passed on across the generations from *deman* (the old people) to *koorlangka* (children). It is well supported by other forms of documented evidence recorded by non-Aboriginal people since their earliest times in the region. *Nyoongar* might say of these accounts: *nidja Nyoongar boodjar were wangkiny* (this is *Nyoongar* land and stories).

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<sup>1</sup> *Nyoongar* elders cited in Moodjar Consultancy (2016) *Statements of Significance for the Fremantle Region and Registered Aboriginal Sites – Cantonment Hill, Rocky Bay and Swan River*. City of Fremantle.

## Ethnographic survey methods

In order to carry out the cultural/ethnographic elements of the survey the following methodologies were used:

1. Established *Nyoongar* cultural safety protocols with *Moodjar* bosses;
2. Collated a file system to manage literature and other sources;
3. Carried out a search of existing sources, researched cultural history of the area and reviewed themes arising from research;
4. Explored the context, *Nyoongar* language and place names of key places in the area with *Moodjar* bosses;
5. Made arrangements with *Nyoongar* cultural bosses/consultants to participate in two day archaeological and ethnographic survey of the site
6. Participated in *Nyoongar* cultural safety induction carried out by *Moodjar* Director, Professor Len Collard;
7. Joined Dr Joe Dortch and cultural bosses/consultants in site walk and inspection of large areas of the site (excluding areas where major works were being carried out through the railway line and train station areas);
8. Filmed commentary of cultural bosses/consultants while they carried out site walk with archaeologist, stopping for the express purpose of recording;
9. Carried out filming of each cultural boss/consultant to ascertain their family and cultural connection to the site and larger proximity, specific areas of expertise and any observations, accounts related to *Nyoongar* cultural heritage of the site and any recommendations they had about plans for the site;
10. Draft report preparation and presentation to cultural bosses/consultants; and
11. Final report prepared.

## Ethnographic survey results

While the survey work located no archaeological sites in the survey area *Nyoongar* custodians identified areas they considered to be culturally significant, including (1) the pinnacles in and around Place ID 37478; (2) ancient soils that potentially contain evidence of early Aboriginal occupation; and (3) groves of culturally important plants. This promoted much discussion about what could be called a '*Nyoongar* reading of boodjar (country)'. While these accounts are unlikely to impact DevelopmentWA's compliance obligations under the Aboriginal Heritage Act (1972) this could form the basis of further 'engagement' opportunities where *Nyoongar* cultural experts assist in the design of landscape plans, street naming, interpretive material and trail/walkways.

The proposed development work will involve ground clearing and excavation and therefore could disturb presently concealed cultural material. Therefore, *Nyoongar* cultural monitoring of clearing and ground-disturbing work is recommended.

## Recommendations

While no archaeological sites are currently evident in the survey area, a number of *Nyoongar* custodians consider the pinnacles area, the sand dune systems and wooded area to the east of the sand dunes are areas of *Nyoongar* cultural significance.

It is on this basis the following is **recommended**:

1. Proponent staff and contractors should be informed of the legal requirement to avoid disturbance to any Aboriginal site as defined in the *Aboriginal Heritage Act 1972* (Western Australia), whether registered or otherwise, and the view that disturbance of a site includes ground disturbance, souveniring or deface.
2. The area of the pinnacles should be preserved and the subject of further ethnographic and archaeological research, mapped using aerial photography shot on drone transects, as pedestrian access is difficult. More detailed and accurate heritage information could then be submitted to DPLH for reconsideration as an Aboriginal heritage site.
3. As much of the wooded area that has thick *balga*, zamia palms, some jarrah and other flora on the eastern side of the sand dunes should be preserved. Clearing of any wooded areas could be undertaken by a *Nyoongar* business.
4. Prior to any ground-disturbing work, Development WA should consider engaging suitably experienced *Nyoongar* to act as monitors of the works in case sub-surface heritage material is inadvertently unearthed. This work should be carried out in association with a suitably qualified archaeologist and anthropologist. Development WA should see this work as a further opportunity for a *Nyoongar* business to manage this work and/or have a *Nyoongar* with expertise in *Nyoongar* knowledge systems and methodologies.
5. Development WA explores 'engagement' opportunities to undertake work with *Nyoongar* knowledge experts to identify *Nyoongar* interpretive information to be used throughout the site (for example, *Nyoongar* identification and protection of flora and fauna species, *Nyoongar* involvement in the concept planning, interpretive signage, timber harvesting and replanting work, revegetation, street naming, landscape plans for public areas, information for homeowner packs, sand dune walkways or trails).
6. In any future heritage survey work DevelopmentWA make arrangements for a pre-survey planning meeting to bring together the archaeologist, ethnographer, project manager, *Nyoongar* consultants/experts, representatives from the proponent parties. This goal of this meeting will be to brief consultants on the scope, previous heritage work, resolve logistics questions and strengthen opportunities for engagement.
7. That in future Development WA consider ways in which Aboriginal heritage assessment and protection can move beyond a compliance to an engagement approach. For example, work with other partners to undertake a region wide assessment of the Aboriginal heritage values from Alkimos to Moore River. A *Nyoongar* led team should undertake this work in conjunction with: *Nyoongar* knowledge experts, ecologists, hydro geologists, flora and fauna-specialists (as well as archaeologists and ethnographers).

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## 1.0 Introduction

Moodjar Consultancy recognises the *Whadjuk* people as the traditional owners of the greater Swan Plain area. For the *Whadjuk* people, these are places that have strong social, spiritual, cultural and historic significance.

The following report provides an account of the *Nyoongar* participants in the survey conducted on the 27<sup>th</sup> and 29<sup>th</sup> of January 2021. The purpose of this section of report is to identify what, according to *Nyoongar* participants, is significant about the *Nyoongar* cultural heritage of the Alkimos site. As has been set out in the Archaeological Report, there are no registered Aboriginal sites within the survey area. However *Nyoongar* custodians and participants in the survey consider the pinnacles area, a small reeded area in the northwest corner of the site and the sand dune systems and wooded area on the eastern reaches of the site to be of *Nyoongar* cultural significance. Inside the surveyed area the limestone outcrops known in Western Australia as “pinnacles”, or limestone root-casts has also been the subject of survey work previously conducted.

The pinnacles in the survey area are mapped as Place ID 37478 *Romeo Road Pinnacles* “Stored Data / Not a Site” in the Register of Places and Objects maintained by the Department of Planning, Lands, and Heritage (DPLH). Despite this downgrading of protection, Place ID 37478 is reported to have high cultural values and has largely been avoided by previously approved development work within the survey area. (Dortch in this report)

*Nyoongar* participants had much to say about this area.

Using their knowledge of *Nyoongar* ways of ‘reading country’ participants also had things to say about the likely use of other areas within the site. This included a small reeded area in the northwest corner of the site and the larger wooded areas east of the sand-dune systems on the site.

In addition, *Nyoongar* participants made remarks about:

- 1) the need for DevelopmentWA to arrange cultural monitoring of areas where major digging and other earth works are being carried out,
- 2) opportunities to carry out more rigorous heritage surveys along the northern sections of the coast predicted to be marked for future developments, and
- 3) the value of Aboriginal heritage, place-naming and other interpretive work to *Nyoongar* families, local government authorities, tourism ventures and housing developers.



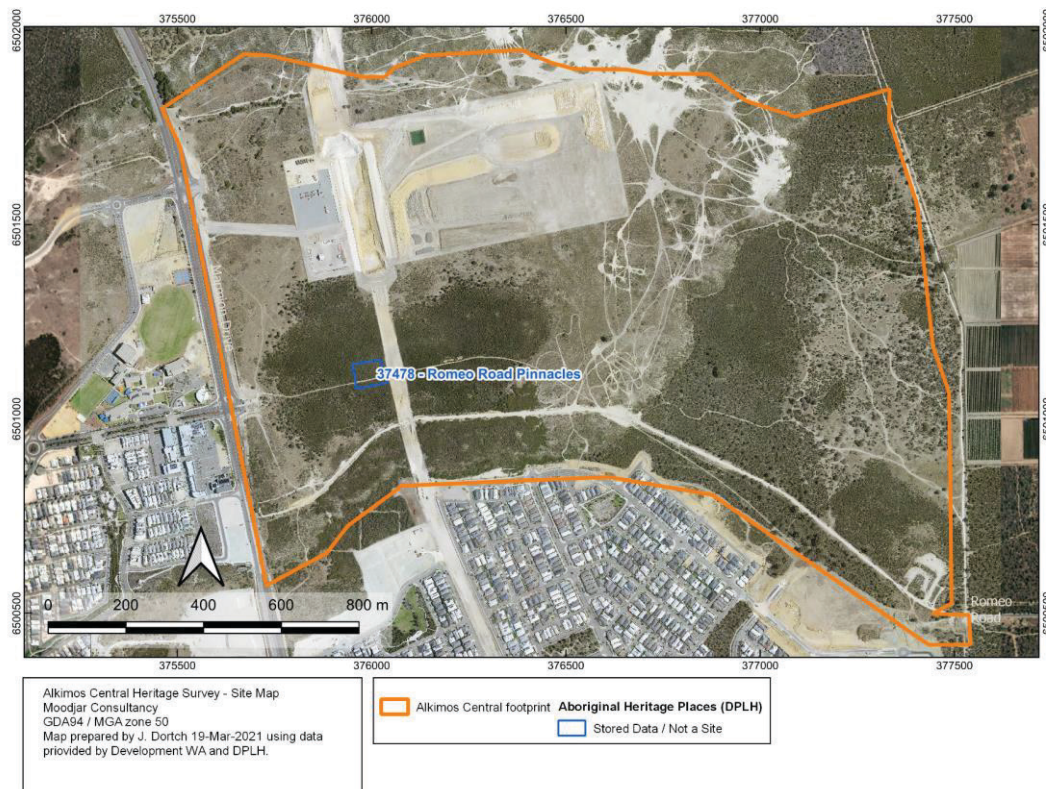


Figure 1: Location of the study area

## 2.0 Background

The 198ha Alkimos Central project is the centerpiece for Development WA’s Alkimos landholding. Plans for this area are aimed at providing key services, an employment focus, a social hub and the amenities for the 57,000 residents of the Alkimos-Eglinton District over the next 25 – 30 years.

According to this project brief:

Land north of Alkimos Central (beyond the Regional Open Space) is known as Alkimos Vista and is owned by Development WA and being developed (in partnership with Lendlease) for mostly residential purposes. Land to the south is being developed for urban purposes by developer LWP and is known as Trinity estate. The land to the east is vacant but is reserved for the Mitchell Freeway extension. The constructed Marmion Avenue is directly on the western boundary. The northern portion of the land to the west of Marmion Avenue is the Water Corporation waste water treatment plant and associated buffer and south of this, is the estate referred to as Alkimos Beach and is owned by Development WA and is being developed (in partnership with Lendlease) with a mix of residential and retail uses.

Planning for the Alkimos City Centre Activity Centre Plan commenced in 2013 with the Structure Plan being approved by the WA Planning Commission in August 2018. Given the time lapsed since the Structure Plan was designed, the Master plan has been reviewed and updated. The result is a more pedestrian orientated design focusing on developing a walkable city centre core around the train station.

In July 2020 Gundi Consulting was engaged as Aboriginal Development Managers to prepare an Aboriginal Heritage Engagement Strategy, administer engagement with traditional owners and allow for these findings to be incorporated into the design of the public realm at Alkimos Central. Gundi Consulting then visited the site and, after viewing the Pinnacles area adjacent to the proposed rail line and falling within the proposed Romeo Road alignment, made the assessment that the Pinnacles area is an Aboriginal heritage site with significant meaning to local *Nyoongar*.

### 3.0 Ethnographic methodology

In order to carry out the cultural/ethnographic elements of the survey the following methods were used:

1. Established *Nyoongar* cultural safety protocols with *Moodjar* bosses;
2. Collated a file system to manage literature and other sources;
3. Carried out a search of existing sources, researched cultural history of the area and reviewed themes arising from research;
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10. Draft report preparation and presentation to cultural bosses/consultants; and
11. Final report prepared.

#### 3.1 *Nyoongar* and heritage work

Before moving onto an examination of previous research in relation to the site area, it is important to make a number of points in relation to the business of ethnographic recording cultural heritage, mapping heritage places and thinking about the *Nyoongar* use of particular sites.

The first point to make is that despite the best endeavours of heritage professionals, it is impossible to know with 'absolute' confidence the extent of *Nyoongar* use of an area. However, given the length of use in the region is likely that at some point *Nyoongar* moved through most tracts of land now the subject of development. The second point to make is that accounts of the heritage of a place are often contradictory, selective and laden with the values and interests of those recording events. Nowhere is this more apparent than in exploration of Aboriginal cultural heritage in Western Australia.

Until recent times the accounts were almost exclusively recorded by non-Aboriginal officials. They largely controlled the 'pens' and record keeping whilst also controlling access to land, planning, and legislating people's movements. The authors of many records were, by and large, people writing about culture, customs, activity and land use that they understood little about. Not surprisingly the available records on *Nyoongar* and other Aboriginal use of places in and around the area studied are strongly shaped and formed by non-Aboriginal professionals, using non-Aboriginal narrative forms and scientific conventions.

It is also worth noting that European cartographic conventions, town planning practices and systems of boundary making are not directly or easily transferrable into *Nyoongar* systems of naming and land use. European mapping practices are usually set out in such a way as to imply that places can be truncated or separated from other places, have fixed names over time, are universally understood and treated, have a principal or fixed sets of land use, and can be understood in isolation. In contrast *Nyoongar* use of *boodjar* (country) is much more relational. Different people will have a different relationship with any given place depending on their family connections, gender, age and knowledge. This means that it is conceivable for different people to have a different connection to the same place. For example, one person may have rights and access to visit a place by virtue of their mother's inheritance; whilst another might have a different set of rights and interests through their grandfather's association. Furthermore, it is impossible to understand any area without reference to its relationship with others. For example, one place may be partially understood as it features in a *Wargal* song, dance or story. This could mean that this place is more deeply connected to other distant sites along the river by virtue of this story.

For *Nyoongar*, any one place may be called several things and be used for different purposes at a number of times throughout the year. For instance, some *Nyoongar* refer to Kings Park as *Karrakatta* (hill of the crabs); *Yongariny* (place for catching kangaroo); *Gennunginy Bo* (the place for looking a long way); or *Karlkarniny* (fire place). All of these names and heritage used are equally correct – depending on the context and time of the year.

For *Nyoongar*, talking about the heritage of a place as if it exists in isolation is akin to talking about a person as if they exist in isolation from their *moort* (family). All of these challenges have been commented upon and noted as part of the State Governments Consultations with stakeholders as part of their proposal to introduce major policy changes to the existing Aboriginal heritage regimes.<sup>2</sup>

A number of those involved in this site survey also had things to say about both the methodologies used for conducting Aboriginal heritage assessment and the methodologies used by proponents for protecting Aboriginal heritage. This included the following observations:

- Aboriginal heritage assessment is structured around an Act that is now almost fifty years old. As a result many of the methodologies adopted by those carrying out survey work are not always consistent with contemporary heritage practice.
- Survey work is often reactive to the needs of a single development and works programmes as set out by proponents rather than shaped by *Nyoongar* interests, and systematic and well-planned heritage research across a region.
- As it stands, what is considered as Aboriginal heritage and significant under the Act does

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<sup>2</sup> see WA Government (2019) Review of the Aboriginal Heritage Act 1972: Key themes and summary of issues. <https://consultation.dplh.wa.gov.au/heritage/aha-review-phase-two/>



not take account of *Nyoongar* knowledge systems nor science beyond archaeology or anthropology. For example, rarely are the insights of ecologists, hydrologists, zoologists and Noongar 'scientists' taken into account.

- Aboriginal heritage survey methodology should take account of proposed changes to the Aboriginal heritage Act, recent emphasis on the impact of Indigenous use of places on the 'social surroundings' in the assessment of Environmental Factors.
- If proponents are interested in moving beyond a compliance approach to an 'engagement' and 'social licence' approach to Aboriginal heritage then it would be wise to involve *Nyoongar* much earlier and across a range of layers of planning and development (ie from concept design, heritage survey studies, works monitoring, landscape and species identification monitoring and protection, production of public and interpretive content).

### 3.2 *Speaking for boodjar (country)*

Establishing whom in the *Nyoongar* community has authority and capability to speak about boodjar in a particular place is not a simple matter. In other parts of the country these people are variously called 'Traditional Owners', 'Elders', 'Cultural bosses', or 'Senior Law People'. These are often people whose association with particular places is shaped by a combination of place of birth, descent, where one has 'grown up', mother and father's place of birth, gender, seniority in law and culture, regularity of contact with country, or in some areas in Central Australia, place where one's umbilical cord fell off. In much of Australia this has grown more complex due to the history of forced removal, loss of access to language, culture and knowledge. This usually means that a number of individuals act as 'bosses for country'. As Myers (1986, p. 128) says, membership of the 'Traditional Owner' group is often widely extended and "therefore groups are not a given". Rather it involves a set of relationships that can be disputed but shared and demands a level of recognition of others. The process of what Western Desert people call *kanyininpa* (holding or carrying) country is the product of dynamic negotiation.

In *Nyoongar boodjar (country)* this is often even more complex given the impact of colonisation and the fact that since the earliest of contact time *Nyoongar moort* (family) have been forbidden by law to access much of their boodjar, had many of their children removed, been forced to live on reserves, missions and particular farms and pastoral properties, unable to marry according to traditional kinship rules, and had their associations with *moort* (family) managed by government. This has had a profound impact on the capacity of people to 'hold' or 'carry' their obligations to boodjar and pass along to future generations their knowledge and language (Machin 1993). This can mean that one's relationship with boodjar has become more associated with family labour patterns, movement to take up opportunities in the market economy, health, education and non-Aboriginal justice. Often a 'Cultural boss' or spokesperson will have a long-term association with a place and have or had contact with those who had passed on their knowledge. O'Connor et al (1989) describes these people as of the 'pivotal generation of the culture transmitters'. This often gives them knowledge of the region's ecology, the natural resources of an area, hunting, fishing and camping grounds, water resources and local flora and fauna. Often these people will 'read the country' using *Nyoongar* ontological, epistemological and theoretical lenses (Benterrak, Muecke and Roe 2014).

### 3.3 *Selection of Nyoongar for the survey*

In line with the terms of the Noongar Standard Heritage Agreement (NSHA) with the Whadjuk people, normally Development WA are required to submit an Activity Notice for the project to the South West Aboriginal Land and Sea Council, so that the Whadjuk working party can select an 8-person survey team. However, at the time of the survey there was no CEO and many of the Director's positions on the SWALSC were vacant. The advice received by Moodjar Consultancy was that the practice for heritage surveys in Whadjuk boodjar was that the team uses their best endeavours to make contact with *Nyoongar* who had previously been involved in heritage surveys in the area. A list of these people were invited to participate in the survey. The following *Nyoongar* took up the invitation and participated:

**Dennis Simmons** was born on *Whadjuk Nyoongar* boodjar with connections to the *Wardantji*, *Yuat* and *Wilimen* people. He has studied performing arts, psychology, conservation and land management as well as having qualifications in mining and construction. He is also a grandfather who is leading work with *Nyoongar* young people to 'hold' and pass on culture, ceremony and language. When he was young he often joined his 'Pop' Ken Colbung who had been visiting and "protecting all the sites around this area." Dennis has participated in a range of heritage surveys in the area (including this particular site).

**Len Collard** was born in Pingelly and spent his early childhood in Brookton to parents Fred Collard and Jean McGuire. The family then moved to White Gum Valley where he finished his schooling. Professor Collard has completed studies at Edith Cowan and Murdoch Universities and now is a tenured Professor of Indigenous Australian Studies at the University of Western Australia. Len's traces his heritage to both Whadjuk and Balardong moort (family) through the Bennell, McGuire and Collard. His grandfather 'Pop' Tom 'Yelakitj' Bennell offered accounts of how in the early years of colonisation 'old grandfather John Mungo Bennell' moved from the Perth area out, along the river, eventually to settle in Brookton and escape the immediate impact of colonisation.

**Betty Garlett** was born in Brookton and then moved to the Fremantle area. Betty's parents were raised in Brookton but with direct descent to Whadjuk boodjar. Betty spent much of her early life around senior people in Brookton and Fremantle, listening to their accounts of life when they were young. After moving to Perth in the 1960s, Betty's family would regularly move back to the bush during 'holidays' and the shearing season to accompany their father who was a shearing contractor. As a result she spent a great deal of time around senior *Nyoongar* speakers. Betty was a Regional Councillor on the Aboriginal and Torres Strait Islander Regional Council during the 1990s.

**Narelle Ogilvie** was born in Perth of Whadjuk, Balardong and Nanda heritage. Narelle spent a considerable amount of her younger years growing up in the Kimberley. She described her connection to the area as coming "through my grandmother's side' and her Nanda heritage through her father and grandfather's side from Kalbarri.

**Freda Ogilvie** describes herself as 'from the McGuire/Bennell line'. Her great, great grandmother was born in Fremantle and her Grandmother Jane Shaw was born in the Middle Swan area and removed to New Norcia. Freda is a retired teacher who has worked in the classroom and in policy and leadership for over thirty years. She worked across the state and in the Northern Territory, particularly focusing on early childhood education and cross-cultural content development.

**Phillip Collard** has family affiliations to the area through his maternal *Nyoongar* lineage and by virtue of the Whadjuk line. He was raised in Kondinin by his parents who were raised in the Central Wheatbelt area and Perth and now lives in the southern suburbs of Perth. As well as working as a

mechanic at one point he ran a nursery and has a lifetime working knowledge of traditional plants and their use.

**Faron Garlett** has *Nyoongar* connections to this country through his father who has previously participated in heritage survey work in the area. He has also spent time living in the Pilbara and other regions to the north of Perth where he also has family connections.

## 4.0 Desktop study results

A desktop study was designed to identify and review the literature that captured *Whadjuk* and other *Nyoongar people's* knowledge of any cultural significance of the site and areas of proximity. The research for the desktop study reviewed published and unpublished sources and literature, oral histories, recorded stories, narratives, and commentaries. These stories, narratives and commentaries were incorporated into this report to provide context for the site visit and inspection. The literature review also incorporated previously recorded oral histories of *Whadjuk Nyoongar*, other Aboriginal and non-Aboriginal groups relating to the broad study area.

The desktop research revealed information about a number of Aboriginal sites in the proximity of the study site. Information gathered about the wider Perth area, specifically the northern suburbs areas also identified evidence related to *Nyoongar* use of the site area.

The information gained from the desktop research will be used to augment the knowledge and information contributed by the archaeological survey.

### 4.1 *Nidja boodjar koorliny: Nyoongar cultural safety*

*Nyoongar* use of *boodjar* (country) is closely tied to old and well-established *Nyoongar* cultural and epistemological frameworks and practices. For example, in *kura* (the past) if, for social, spiritual or economic reasons, a neighbouring *Nyoongar* group was to travel through to the Perth area the onus was on them to comply with certain obligations and regulations. At the same time, local *Nyoongar boordier* (bosses) were responsible for the health and safety of visitors. Part of the obligations of *wam* (outsiders) included the expectation that they announce their arrival; and bring enough *daadja* (meat), *mereny* (food) and goods to exchange for the length of their travels. The expectation has been that visitors must honour and respect *boodjar* (country) and *boordier* (bosses).

It is also important to *Nyoongar* that visitors take instruction from locals on where to safely go and how not to offend *jennark* (spirits) or *Waugal* (the old snake spirits) nor move through country without proper introductions. Failure to do so could have devastating consequences on the health and wellbeing of visitors and custodians. Thus the 'cultural safety' of visitors was tied up with obligations of both locals and visitors.

Presenting on behalf of the Combined *Noongar* Native Title Claim, Palmer explained it thus:

In *Noongar* thinking, an owner of country has the right to exclude or grant permission to non-owners to enter and use their land. But he or she also has a duty to share their land with others and a duty to ensure that no harm comes to visitors. The Aboriginal evidence amply demonstrates that *Noongar* people believe that unknown country is potentially dangerous, because *Noongar* land is possessed of spiritual potentialities which must either be avoided or knowledgably managed.

Ignorance of country is therefore a matter of personal jeopardy. To venture into unknown country is to imperil both yourself and those who depend upon you. This means that, for the most part, Nyungar people regard country that is not their own, and therefore which is unknown to them, as country to be avoided. Based upon Dr Palmer's research data and his own observations, he is of the view that Noongar people recognise a general duty to care for their own country. Looking after country typically requires a personal inspection to check for damage, perform maintenance, and ensure there is no unwelcome or unexpected development.

Another important aspect of "looking after country" and "speaking for country" is to make any representations that might be necessary to ensure that spiritually sensitive places on country are not harmed by development. There were many instances in the Aboriginal evidence where witnesses spoke about the need to be consulted about and to protect, sites and indeed, country generally ...

There is also a right and a duty to pass on knowledge about country and about Nyungar ways so as to ensure the continuity of Nyungar tradition over the generations. The passing on of knowledge of country is understood to be a duty of a landowner.<sup>3</sup>

There is considerable evidence that local *Nyoongar* were well acquainted with how to protect themselves and outsiders. For example, Daisy Bates records that in and around the greater Perth area custodial *Nyoongar* would scatter rushes or leaves from *balga* (the grass tree) at a particular spot and say the following before moving past a *Waugal* site:

*Ngaija noono daranya gonin kalguttuk nganya mamman* (I your bed carry countryman me father)<sup>4</sup>

At some places, other protocols were followed. For example, game might have been killed or it may have been prohibited to cook food near a *Waugal* pool.<sup>5</sup> Before going to some places associated with the *Waugal Nyoongar* sing out:

*Ngain-ya ye-ya koorliny* (I am coming now). *Nyal winjala nyinde* (Where are you?).<sup>6</sup>

Today *Nyoongar* custodian elders continue to observe these and other protocols to ensure that visitors and newcomers are given the appropriate welcome and permission to enter *boodjar* (country). Colbung spoke of the special rituals that involve speaking to *wardungs* (crows) before approaching *Waugal* sites.<sup>7</sup> To *Nyoongar* responsible for the areas around Perth the *wardung* is regarded as a keeper of country. According to Colbung:

... that's why you've got to ask the crows' (birds) permission to come. They've got to hear you and if they hear you, you're right! If you couldn't find them here, you couldn't do anything.

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<sup>3</sup> *Bennell v the State of WA*. Federal Court of Australia (Wilcox J) 19 September 2006 [2006] FCA 1243.

<sup>4</sup> Vinnicombe, P. 1989. *Goonininup: A Site Complex of the Southern Side of Mount Eliza*. Perth: Department of Aboriginal Sites. p. 17.

<sup>5</sup> Vinnicombe 1989, p. 17.

<sup>6</sup> Vinnicombe 1989, p. 17.

<sup>7</sup> Bloor, E. 1987. *Aboriginal usage of Kings Park*. Unpublished report: Department of Aboriginal Sites. Perth: Western Australian Museum.

The late Ken Colbung is also quoted as offering the following welcome to visitors:

*Baal quabelee wanjoo budjarrah winnaitch budjarrah, kata-tja-nyoon (we give and receive from you the very best welcome on this sacred earth and we will be at peace with each other).<sup>8</sup>*

During the survey work similar processes were observed by all of the cultural bosses/consultants. On the morning of both days Len Collard led a process whereby each boss followed his acknowledgement in *Nyoongar* language. Len sang out:

Len: *Kaya, Kaya, moortaniny nidjar boodjar. Noonar moortaniny yaalkoorliny yeye. Noonooka katatjin nyuny, genininy nyuny yaalakoortiny. Noonookurt ngenalung kura barlung boodjar nyinalung gnarlung boodjar, gnarling yeye nyininy. Nyung korlanginy geneniny winji noonooka koora baal baranginy jenna koorliny nidja boodjara ...*

Hey, hey family of this country. You are my family that goes along and stays here today. Your knowledge I have seen as I go along. You see from a long time ago that this country is given to us so today we can sit here. Since I was a child I have gone along knowing this.

*Bullarung balga, boordier jarrah bullarung bornaworliny nyinalung nidja, Nyung weirn kwop, nyung darlungniny noonar. Nidja moornaniny baalang gnalla koorliny. Noonook daa kwop weirn yaalkoorliny. Gnullayiny, yuart barang weirn, nyung barranginy nyung, kwop weirn koorlanginy barranginy nyung yaalkoorliny.*

Plenty grass trees, boss jarrah, here there is plenty important timber for sitting. My spirit is good, I hear your tongue. This black person they go along with us. Your tongue is healthy spirit going along. We getting no bad spirits, we get good spirits going along, standing up along.

He then took a mouth full of water and sprayed it out onto country to signify his respect for those who have long passed, making sure they could tell who he is by his body mixing in with the water.

He explained:

Just to do a translation for the records, basically what I was saying was that we singing out to our ancestors and to our family. They are our relations, we are direct descendants of the people whose land where we are. They have been here in the past and we are here today. And we are letting them know that we know who they are, we are familiar with them and we want to talk to them in the old language so they hear. And we are talking to the country in our language so they hear and acknowledge that we are still connected to our language and our people and to our knowledge. I've asked that the good spirit comes and looks after us as we go on our country. And we are telling the bad spirits to keep away. We come here to look at our country and to learn and get to know more because we know that there is going to be big disruptions here. We are trying to get evidence and information to help us to care as much as we can within the constraints that how the developers do things. That's a task, a job that we take seriously and do our very best to try and protect aspects of the tangible and intangible heritage on this country. I blew some water out as an acknowledgement to the Rainbow Serpent who is one of the main big fullas in our culture and our law and in our language and understanding. And we are basically asking that they look after us as we get around the traps and we don't get tangled up in any negative energy. So I am going to ask

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<sup>8</sup> Western Australian newspaper (18/11/1988) p. 52.



everyone to sing out of your own volition and we can stop for just a minute, listen to the wind blowing and then we can get on with our job. So I want everyone to sing out in a loud voice, doesn't matter what you say, just let em know who you are, that you are looking forward to doing some work today.

Others then took up the invitation to 'sing out to the old people' in the way each felt was comfortable and appropriate. All used *Nyoongar* language (and some *Nyoongar* English) to demonstrate their respect, announce their work and ask the old people to keep them safe.

Dennis Simmons added in *Nyoongar*:

Just shouting out to *Gtunjatajaara Gnarkiny* or Ken Colbung who has been protecting all the sites around this area. And being with him as a young man for thirty years coming out this way. So I just like to make sure that he is acknowledged through this process.

At the conclusion of the survey on Friday afternoon Len Collard and Dennis Simmons led all in singing out to the 'old people' in recognition of their act of keeping people safe during the survey.

## 4.2 Understanding *Nyoongar* methods of reading *boodjar*

A range of scholars have contrasted the way that Australian Indigenous groups come to understand the history of Aboriginal land use with 'western' systems of mapping, scientific inquiry and social science knowledge recording. These Indigenous methodologies have been less reliant on literature, abstractive and extractive means of understanding. Rather *Nyoongar* are more reliant on observation, interpretation and 'reading' of the country using a mix of repertoires including *bullani* (deep listening), *jenna koorliny* (walking), *nyinniny* (sitting) and *nyarliny* (sweating) so that one's weirn (spirit) can pick up the *keniny* (wind), *djierap* (birds), *kep koorliny* (weather), *boodjar* (country) *moyran* (grandparents). These methods allow those who are 'fluent' in *Nyoongar* knowledge to interpret the history of land use by 'talking back' to the old voices through what Collard and Palmer (2015, p. 190) call the adoption of *Nyoongar* hermeneutic methods.

Collard and Palmer suggest that these styles and methods are often seen as unconventional. However, on both days of the survey *Nyoongar* participants drew on them considerably. As Collard explains elsewhere, people who use these methods:

draw on the cultural experience and knowledge gained from *koorliny yirra Noongar* (growing up Noongar), *katitjin Noongar wangkiny* (learning to speak the language) and *katitjin Noongar* (interpreting the 'evidence' using Noongar ways of thinking). We have also used the oral accounts of other Noongar as well as material from the written historical record. Some Western-trained historians might not always accept the evidentiary strength of this approach. (Collard and Palmer 2015, p. 191).

As well as working with scientific method Collard led the survey methodology in a way that recognized "*gulla boodjar ngulla boordier* (our country is our boss and guide). As mentioned earlier this started with *Nyoongar* participants literally singing out to the 'old people' and listening for its response.

As Collard (Collard and Palmer 2015, p. 191) explained that his *konk Whadjuck/Balardong* (*Whadjuck* and *Balardong* uncle) Sealin Garlett reminded one time about his own experiences about

this very matter telling me that:

my Grandma (*Yurleen*) used to say this was to be passed on to her children and her grannies ... there are places where you find serenity; where you find a sense of belonging ... that this is a part of our place, this is a part of our area, our culture. *Nitcha boodjar koonyarn nitcha koorl buranginy boodjar karluk maya koonyarn wah. Deman deman and maam wiern kia moort koonyarn. Deman and maam noonookurt, boodjar koonyarn karla koorliny. Koorlongka boorda gneenunyiny.* Those words say that this is my country where I belong. This is *deman* and *maam*, my grandmother and grandfather's land, this is their land where their spirits move now. Boorda or later on, this is going to be the responsibility of my children and my children's children, their home and this place will always be linked to their spirit.

This was an important part of methodology to adopt during survey as those present were literally related to country. They and their forebears have long talked with it, walked with it, feed it and get nourished by it. As a consequence country reveals things to them. Following this ontological logic before each participant was born they dwelt within country as spirits. When they pass away they head back to this form. Each tree, animal, rock and piece of vegetation are therefore *moort* (family). This means that they have brothers and sisters that are certain trees, rocks, grandparents that are present, animals that are their parents.

### 4.3 *Nyoongar use of boodjar*

The evidence indicates that the study area sits within a region that has long been part of a rich broader culture and ecosystem that provides significant spiritual and physical sustenance to *Whadjuk*. Indeed, it is located in between the ocean and major lake and other water systems that have a vital role in the creation of the world for *Whadjuk*, a part of the interconnected movements of the *Waugyl* as it carried out its task of "making of the streams and waterways" in the *nyittiny* (cold times).<sup>9</sup>

Prior to the colonisation of the areas around Perth and the southwest of WA, the region was well watered, fertile and relatively densely populated by some thirteen or fourteen socio-dialectal groups who today self-identify as *Nyoongar*<sup>10</sup>, see Figure 1.

Figure 1. Aboriginal dialect groups of the south west of Western Australia, based on Tindale (1974).  
Source: Metropolitan Redevelopment Authority 2016

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<sup>9</sup> Laurie. M. (ed.), 2003. 'Interview with Cedric Jacobs', Town of Vincent Local History Collection (oral history collection), Perth, Australia.

<sup>10</sup> *Nyoongar* elders cited in Moodjar Consultancy (2016) *Statements of Significance for the Fremantle Region and Registered Aboriginal Sites – Cantonment Hill, Rocky Bay and Swan River*. City of Fremantle.

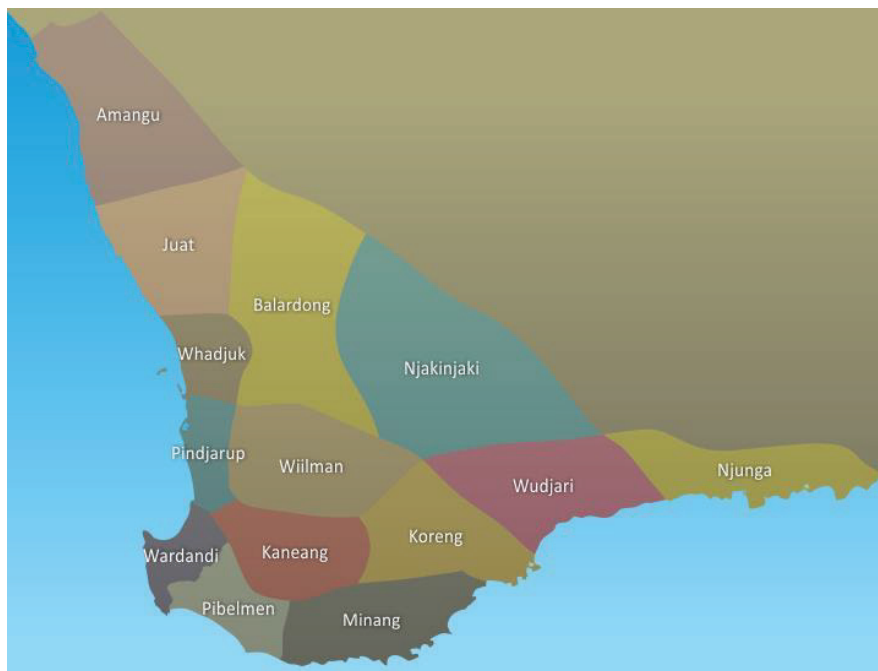


Figure 2: Noongar language groups

The term *Nyoongar* (man or people) describes those of Indigenous Australian descent whose forebears occupied *Nyoongar boodjar* (*Nyoongar* land). *Nyoongar boodjar* extends approximately from south of Geraldton, to Cooroo, across to the small Wheatbelt town of Nyoongah, towards the southern coast around Esperance.<sup>11</sup>

Knowledge of *Nyoongar boodjar* has, from time immemorial, been passed on across the generations from *deman* (the old people) to *koorlangka* (children). It is well supported by other forms of documented evidence recorded by non-Aboriginal people since their earliest times in the region. *Nyoongar* might say of these accounts: *nidja Nyoongar boodjar were wangkiny* (this is *Nyoongar* land and stories).<sup>12</sup>

To *Nyoongar* it is impossible to talk about *boodjar* (country) and people as separate entities. As Patricia Baines wrote:

To look at the land through *Nyoongah* eyes is to perceive personhood in all life forms. Old trees are parents and seedlings are children. Birds and animals, particularly when one of them behaves in an unusual manner or is distinguished in some way, may be a deceased ancestor. The land is seen as a huge body – most often it is recognized as the body of one's mother. To put a trench through the ground is to scarify the mother's back or dig into her

<sup>11</sup> Collard, L. and S Harben. S. 2009 *Nidja Beeljar Boodjar Noonookurt Nyininy: A Nyoongar Interpretive History Of The Use Of Boodjar (Country) In The Vicinity Of Murdoch University*. Murdoch University.

<sup>12</sup> Collard, L. and Palmer, D. 1998. *Nidja Goordandalup! Noonookurt Nyinniny: A Nyungar interpretive History of the Use of Boodjar (Country) in the Vicinity of the University of Western Australia*. Murdoch: Murdoch University. p. 14-15



guts.<sup>13</sup>

The late Robert Bropho expressed similar sentiments when talking about the relationship between *Nyoongar* and country in an area near *Goonininup* (south of Kings Park). He said:

Further around the corner you've got the – secret women's spring there – that's the women's business – the water running out of the hill – the white man says it water – but we know its all milk from the mothers' breast in her body – you go onto the Bridge and – it's all important there too – the footprints are under the water there – where they crossed – over to Kennedy Fountain and the Brewery they did things and went up to Kings Park<sup>14</sup>

*Nyoongar* say that *Nyoongar boodjar* (country), began during the *nyittiny* (cold time), when the world was flat, soft and featureless. During this time (before people) ancestral spirits dwelt and wandered. As Noel Nannup puts it, they drifted in and out of their spirit forms, into the physical and material world.<sup>15</sup>

The *Waarkal* (rainbow serpent) was the first to change from pure spirit form and become "real". This allowed it to move across the unformed land, fashioning hills and valleys, tunneling under the ground and then up again. This is how rivers, lakes, swamps and wetlands came into being<sup>16</sup>. In this way, *Nyoongar* say that the *Waarkal* created the waterways, and acts as the keeper of all fresh water sources. 'Pop' Tom Bennell describes this 'old carpet snake' further:

The *Waakal* - that's a carpet snake and there is a dry carpet and a wet carpet snake. The old *Waakal* that lives in the water, they never let them touch them. Never let the children play with those. They reckon that is *Nyungar koorlongka warra wirrinitj warbaniny*, the *Waakal*, you're not to play with that carpet snake, that is bad. ... *Nitcha barlup Waakal marbukal nyininy* - that means he is a harmless carpet snake. He lives in the bush throughout *Nyungar budjar*. But the old water snakes; they never let them touch 'em. ... the real water snake oh, he is pretty, that carpet snake. ... the *Nyungar* call *him Waakal kierp wirrinitj*. That means that carpet snake, he belongs to the water. You mustn't touch that snake; that's no good. If you kill that carpet snake *noonook barminyiny* that *Waakal ngulla kierp uart*, that means our water dries up - none. That is their history stories and very true too.<sup>17</sup>

There is not a great deal of evidence of water on the survey site (except for one small area of reeds in the north-west section of the site and some evidence of kangaroos digging for moisture in the western parts of the site) *Nyoongar* participants spoke about the likelihood that this is a recent phenomenon caused by the use of ground water by nearby market gardens and housing development. Others suggested that seasonal water flows fluctuate so that January is the least likely

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<sup>13</sup> Baines, P. 1988. *A litany for land*. In Keen, I. (ed) *Being Black: Aboriginal Cultures in 'Settled' Australia*. Canberra: Aboriginal Studies. p. 228

<sup>14</sup> Cited in Collard, L. and Palmer, D. 1998. *Nidja Goordandalup! Noonookurt Nyinniny: A Nyungar interpretive History of the Use of Boodjar (Country) in the Vicinity of the University of Western Australia*. Murdoch: Murdoch University. p. 14-15

<sup>15</sup> Nannup, N, 2003 *Carers of Everything*

[http://www.cockburn.wa.gov.au/documents/AboutCockburn/Sister\\_Cities/E\\_Carers\\_of\\_Everything.pdf](http://www.cockburn.wa.gov.au/documents/AboutCockburn/Sister_Cities/E_Carers_of_Everything.pdf) [Accessed 24 October 2016]

<sup>16</sup> Nannup, 2003

<sup>17</sup> Bennell, T. 1978. Oral Interview. Transcribed in 2002.

time to see ground water.

Dennis Simmons had this to say:

There was more water around here (on the survey site area) but there has been a lot of development around here. Like even this area here (on the west side of the site) was a station so there was definitely water all the way here but development and industry has sucked a lot of water. Plus we know the *Gnangara* Mound, that water source, with industry pulling so much water out of it we got saltwater pushing right back inland and that is killing trees and things like that.

Even so, much of the study area is very close to one of the richest freshwater systems in the southwest with old springs, swamp areas and lakes being approximately a kilometre from the study site. This demonstrates that the site is located very close to a broader area of much significance.



Figure 3: Map of Aboriginal sites in proximity to the study area (registered and listed sites are numbered)

Goode and Harris (2017) observe that near the survey site a vast and extend system of lakes exists from Lake Joondalup to Loch McNess, through to Moore River and surrounding swamps, wetland areas and freshwater springs were used by *Nyoongar* for moving, gathering, camping, food and ceremonial purposes prior to contact with *nyidyung* (white people) and during the early years. The

written record exists since at least George Grey walked through the area during his return journey to Perth from the Murchison. Starving and thirsty he claims to have been treated well and with hospitality by a group of *Nyoongar* who provided a meal of frogs, roasted 'by-yu' nuts (from the *Zamia* tree) and a small fresh-water tortoise (Grey 1841).

*Yellagonga* Regional Park, which was created in 1990 and named after *Yellagonga* the boordier (boss) of the Mooro group of Whadjuk *Nyoongar*, is part of the system of lakes, springs and swamps. The Park is approximately 13 kms long and includes Lake *Joondalup*, Lake *Goollelal*, *Beenyup* Swamps and *Walluburnup* Swamp (Department of Parks and Wildlife, n.d.). Ethnographic and earlier *nyidyung* (white people's) records confirm that that these areas included significant camping places for *Yellagonga* and other *Nyoongar* after colonization. We can then show the connection between this area and the Swan River itself, establishing that prior to camping here, *Yellagonga* had a main camp at *Kattanyininy* (Mt Eliza and Kings Park) meaning 'all sit down place'. When Mt Eliza was no longer available to *Yellagonga*, he clearly moved on to Lake Monger and other northern camps (Goode et al 2017).

Elsewhere *Yellagonga* Regional Park has been described as:

an important camping area used widely for watering, food-gathering, camping and tool-making, hunting and corroborees, and summer social life... was used as an eastwest staging between the foothills and the ocean and a north-south staging between Mt Eliza and the Moore River, in the Aboriginal seasonal cycle of camp movements (Brittain 1990 cited in DCLM 2013: 3).

Lake *Joondalup*, which has been suggested to mean "place of whiteness or glistening" (Landgate n.d.) is also connected to this region and other places of importance to *Nyoongar*. Indeed there are a number of caves part of a system that has mythological significance. This cave system was described as joining Lake *Joondalup* to the sea by the late Mr K. Colbung (deceased and Mr Simmon's grandfather). Nearby other caves that are located further north of Lake *Joondalup* and closer to the site near *Neerabup* and *Yanchep* have mythological significance and also contain skeletal material (Site ID 3186 *Yonderup* Caves) and engravings and artifacts (Site ID 4404 *Orchestra* Shell Cave).

As Bates remarks, these areas are of critical importance to *Nyoongar*:

All permanent native waters have legends attached to them, legends of the 'dream' time, which go back to the days when birds and animals possessed human attributes, or were human beings, or were groups of which the bird or animal was representative, or were magic animals and birds possessing the power of human speech. The natives cannot say that the 'founders' of the various permanent waters were altogether human, although birds or beasts, or half bird half human, but the bird or animal name only is always given in the legend never a human name.<sup>18</sup>

At the same time, non-Aboriginal science (principally archaeological research) would say that

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<sup>18</sup> Bates D. 1966. *The Passing of the Aborigines*. Second Edition. William Heinemann, Melbourne and Sydney. p: 157.

*Nyoongar* have lived throughout the southwest for at least 40,000 years.<sup>19</sup> Both *Nyoongar* knowledge and archaeology confirm that before contact, *Nyoongar* often camped in close proximity to *Waarkal* sites near water. Places in and around the study area and throughout the Swan Valley wetlands were clearly important in this regard.<sup>20</sup> As mentioned earlier, much of the areas in proximity to the survey site are built over the footprint of a spring and swamp system close and connected to the Swan River. These swamp systems were said to have been abundant with many foods such as water birds, *koolya* (frogs), *gilgies* (freshwater crayfish), *yaagan* (turtle), and a range of edible plants.

As a consequence of the routine movement between these swamps and lakes and the popularity of the area, there would have been a number of key *bidi*<sup>21</sup> in the area. These *bidi* connected important places in the area called *Mooro*<sup>22</sup> – leading *Nyoongar* groups from their inland camps and other places of residency to this specific part of the coastal and river area, to conduct ceremonial and cultural business, hunt, camp and fish (particularly during the *Nyoongar* season<sup>23</sup> of *Kambarang*<sup>24</sup>). *Nyoongar* have long moved inland during the season of *Makuru* when cooler winds from the southwest swept across the region. Later, people returned to coastal areas in *Kambarang* with the arrival of warmer weather and as rains decreased. In the 1830s George Grey, described *Nyoongar* use of these wetlands:

...swamps producing *yun-jid*, a species of *typha*, served by well-established paths and supporting abundant populations in clusters of well built, clay plastered and turf roofed huts...these superior huts, well-marked roads, deeply sunk wells and extensive *warran* grounds all spoke of a large and comparatively speaking settled resident population.<sup>25</sup>

Over the hot season of *Birak*, controlled burning ensured that the bush had been regenerated so that with the arrival of the season of *Djilba* milder conditions promoted growth.<sup>26</sup>

This means places through the study area would have been adjacent to some of most important *bidi* connecting *Nyoongar* to other *moort* (family) throughout *Whadjuk Nyoongar boodja* (country). This is partly because of the importance of the area as a food source for *Nyoongar maam* (men), *yorgka* (women) and *kullungar* (children). Indeed, at the time of colonisation the largest hunting grounds in

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<sup>19</sup> Flood, J 1989, *Archaeology of the Dreamtime*, Collins Australia, Sydney.

<sup>20</sup> see Figure 4

<sup>21</sup> *Nyoongar* word for track or trail.

<sup>22</sup> Green, N. 1981 "Aborigines and White Settlers," in *A New History of Western Australia*, ed. CT Stannage. Nedlands: University of Western Australia Press.

<sup>23</sup> <http://www.bom.gov.au/iwk/nyoongar/kambarang.shtml>

<sup>24</sup> During the *Kambarang* season (October/November) we see an abundance of colours and flowers exploding all around us. The yellows of many of the Acacias continue to abound, along with some of the Banksias and many other smaller delicate flowering plants including the Kangaroo Paw and Orchids. Also during this time the Balgas will also start to flower, especially if they've been burnt in the past year or closely shaved. One of the most striking displays of flowers to be seen during this season will be the "Moodja", or Australian Christmas Tree (*Nuytsia*). The bright orang/yellow flowers serve to signal the heat is on its way.

<sup>25</sup> Grey, G. 1841 *Expeditions in Western Australia 1837-1839*. Perth Hesperian. pp. 12-38

<sup>26</sup> See City of Perth (2012) *Boodjargabbeelup – Point Fraser Nyungar Cultural Interpretation*. Brochure.



proximity to the Swan existed north of the river.<sup>27</sup>

They used *gidgees* (spears), netting, and hand seizing as techniques to collect food like birds, eggs, fish, frogs, gilgee, coonacs, marron and tortoise.<sup>28</sup> *Yok* (women) were central to this. To catch *djildjit* (fish) *Nyoongar yok* would drive them into shallow water. Two or three would watch the shoal from the shoreline, while twenty or thirty men and women would take boughs and form a semi-circle out in the shallow bay areas. Gradually closing in, they would hedge the *djildjit* in a small space close to the shore, while others got into the water to throw the fish onto the land.<sup>29</sup>

*Yok* (women) were also active and talented in the art of catching *djildjit* (fish)<sup>30</sup>. *Yok* had their own methods driving them into shallow water. Two or three women would watch the shoal from the beach, while twenty or thirty men and women would take boughs and form a semi-circle out in the shallow bay. Gradually closing in, they would hedge the fish up in a small space close to the shore, while a few others got into the water in order to throw them out with their hands<sup>31</sup>. Lyon claims to have seen first hand the dexterity of *Nyoongar* skills saying that “half a score of men will spear upwards of 200 fish in two to three hours.”<sup>32</sup>

*Nyoongar* sometimes cooked the *djildjit* by simply broiling them on the fire. At other times they chose a thick, tender piece of paper bark, tore it into an oblong shape and wrapped the *djildjit* in it. It was then tightly wound with strings from string bark or grass was then slowly baked in hot sand covered with ashes. This ‘tying up cooking’<sup>33</sup> allowed for the food to be prepared with the paper bark then peeled back and used a serving dish. *Djildjit* cooked in this way produces a succulent juice and gravy.<sup>34</sup>

Places in proximity to the study area, particularly the swamps and springs, would have been filled with marine life readily available to those using *gidgee* (spears). Armstrong describes the use of this *Nyoongar* technology:

The spear is their (*Nyoongar*) great instrument in fishing, as well as in the chase. They use baits, such as crabs broken small and thrown in as ground baits ... In fishing for fresh water fish called cobbler, they fix a muscle on the end of a pointed stick, which they present before some hole ... where the fish are known to lurk, and as soon as the cobbler, lured from his retreat, approaches the bait, the native makes certain prey of him. Indeed the skills of the

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<sup>27</sup> Williams, A.E. 1984. *From Campsite to City*. Nedlands: City of Nedlands.

<sup>28</sup> See City of Perth (2012)

<sup>29</sup> Hallam, S. 1987. Aboriginal resource usage along the Swan River. In John, J. (Ed) *The Swan River Estuary: Ecology and Management*. Bentley: Curtin University. p. 27. Hallam, S.J. 1975 *Fire and Hearth*. Canberra: Australian Institute of Aboriginal Studies. Meager S.J. & Ride, W.D.L. 1980. Use of natural resources by the Aborigines of South-western Australia. In Berndt R.M. & Berndt, C.H. (Eds.). *Aborigines of the West: Their Past and Their Present*. 2nd. ed. p. 66-80. W.A.: University of Western Australian Press.

<sup>30</sup> Moore, 1884, p. 55-56

<sup>31</sup> Hallam, 1987, p. 27

<sup>32</sup> Lyon 1833

<sup>33</sup> Grey 1841, p. 275-6

<sup>34</sup> Hallam, S. 1987 p. 27.

coast tribe in spearing under water is truly surprising.<sup>35</sup>

The area would have been rich in *koolya* (frog) and *yaargin* (tortoise). Frogs were cooked on a slow fire of wood ashes. *Yorga* (women) prepared them for eating, holding them in one hand by the hind legs and with an adept pinch of a finger and thumb, remove the lower part of the frog intestine. The rest of the frog was then eaten bit by bit from the head to the toes.<sup>36</sup>

*Yorga* also possessed the skill and expertise to find and catch freshwater tortoise, available in the dried up swamps and waterways of the area. They would walk through these areas using their toes to detect the breathing holes where the animals lay. Grey describes *yorga* working the dried waterways close to the area:

The season of the year in which the natives catch the greatest quantity of frogs and freshwater shellfish, is when the swamps are nearly dried up; these animals then bury themselves in holes in the mud, and the native women with their long sticks, and their long thin arms, which they plunge up to the shoulder in the slime, manage to drag them out; at all seasons however they catch some of these animals, but in summer a whole troop of native women may be seen paddling about in a swamp, slapping themselves to kill the mosquitoes and sand flies, and every now and then plunge their arms down into the mud and dragging forth their prey. I have often seen them with ten or twelve pound weight of frogs in their bag.<sup>37</sup>

*Nyoongar* extensively used flora and fauna resources in areas like the swamplands the study area, carefully following well-established laws and customs to ensure stocks were sustained. Flora and fauna were not only eaten, *Nyoongar* also used them for clothing, tool production, ceremony, and health maintenance. Clothing such as *booka* (cloaks) and *choota* (bags) were made from *yonka* (kangaroo) skins and held together with bone and sinew. At times of ceremony, people were painted up with *wilga* (ochre) and wore headdresses adorned with *koomal* (possum skin) and feathers from emu and cockatoo.<sup>38</sup>

Commenting on *Nyoongar* use of the array of resources George Grey said they knew:

Exactly what it produces, the proper time at which several articles are in season. According to these circumstances he (sic) regulates his (sic) visits to the different portions of his (sic) hunting ground.<sup>39</sup>

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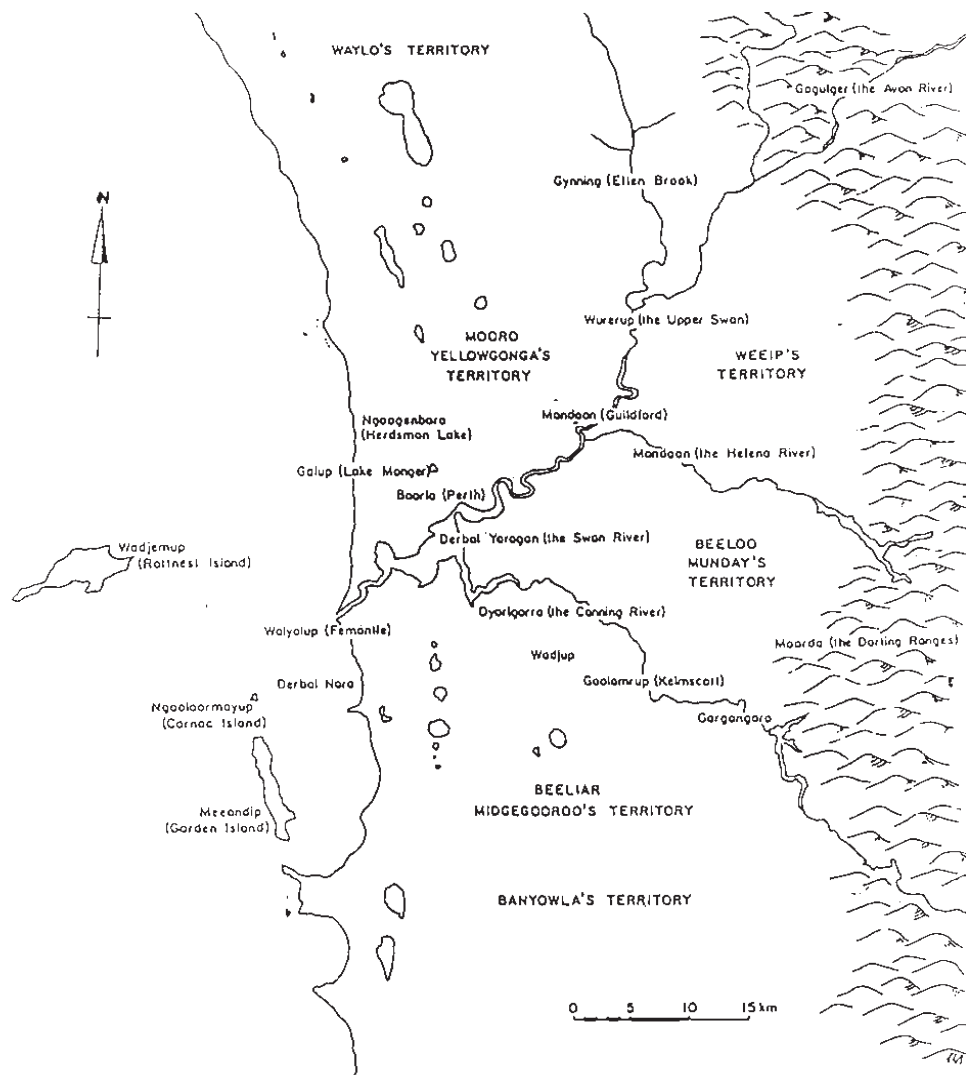
<sup>35</sup> Armstrong, F. 1836. Manners and Habits of the Aborigines of Western Australia. *Perth Gazette*, October 1836. Moore, G.F. 1884. *Diary of ten years eventful life of an early settler in Western Australia, and also a descriptive vocabulary of the language of the Aborigines*. London: Walbrook.

<sup>36</sup> Hallam, S. 1980. Aboriginal women as providers: the 1830s on the Swan. *Aboriginal History*, Vol 12-15. p. 46

<sup>37</sup> Grey 1841 p. 276.

<sup>38</sup> Dale, 1834

<sup>39</sup> Grey 1841.



Nyungar Place Names and Territories: Swan River Coastal Plain  
 (As told to Robert Lyon by Yagan in 1832)  
 Source: N. Green, *Broken Spears*, Focus Education Services Perth, 1984, p.50

Figure 4. Noongar territory during early colonial times<sup>40</sup>

Many places adjacent to the study area are also connected to other significant sites further south, such as women's birthing sites at *Matagarup* (Heirisson Island), hunting and ceremonial sites at *Kaarta Gar-up*, *Kaarta Koomba*, or *Mooro Katta* (Kings Park), and the men's ceremonial ground in the Reabold Hill area.<sup>41</sup>

There is also a number of significant women's business sites near due to the presence of *wilgi*

<sup>40</sup> Green, N. 1984. *Broken Spears: Aborigines and Europeans in the Southwest of Australia*, Cottesloe.1984, p.50

<sup>41</sup> Jacobs cited in Busher, N. 2016 *Yagan Square Cultural Heritage Management Plan*. University of WA.

*garup* (ochre deposit) in the vicinity of Perth. *Nyoongar* women were responsible for the *wilgi garup*.<sup>42</sup> *Wilgi* is a vitally important trading commodity for *Nyoongar* and other Aboriginal groups. Indeed, there is evidence that *wilgi* from Perth has travelled as far as the *Yankunytjatjara Pitjantjatjara* country that crosses the border into South Australia and the Northern territory.<sup>43</sup>

The greater Perth area is acknowledged by *Whadjuk Nyoongar* as “a place where ‘fair or place of trade occurs’; where families of people gather for kinship and in-law making; where mothers, fathers, and old people get together; and where young men and women whom have ‘come of age’ meet future husbands and wives.”<sup>44</sup>

Another resource exploited by *Nyoongar* was a fermented drink made from the honey nectar of *Mangyt* (banksia flowers). In the eastern sections of the site there are rich stands of banksia that would have been harvested. *Nyoongar* called this process *Nyogulang* which involved steeping and infusing the flowers in fresh water. Apparently after the drink had fermented it had a rather heady effect on the drinker<sup>45</sup>.

Not surprisingly the areas around the lakes systems were also important social and ceremonial gathering places as well. Throughout the *boodja* (area), there were and continue to be important waterways intertwined with the old tracks of other ancestral spirits who travelled across the country. These ancestral spirits encountered each other and in the course of these encounters created the features of the landscape such as hills, lakes, swamps and the stars.<sup>46</sup>



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<sup>42</sup> Jacobs cited in Busher, N. 2016.

<sup>43</sup> Collard, L. and Jones, T. 2014 *Karla Yarning: This City is Whadjuk Country*, City of Perth.

<sup>44</sup> Harben, S. Collard, L. Stasiuk, G. Nelson, D. nd. *Recording Traditional Knowledge*, Avon Catchment Council.

<sup>45</sup> Fletcher Moore cited in Hallam, 1987, p. 29

<sup>46</sup> Stocker, L. Collard, L & Rooney, A. 2016) Aboriginal world views and colonisation: implications for coastal sustainability, *Local Environment*, 21:7, 844-865; Vinnicombe, P. 1989 p. 19.



Figure 5. Depiction of *Waugal* by the late Shane Pickett

While it is the case that the landscape around the study area has changed significantly since non-Aboriginal contact, for many *Nyoongar* it continues to be a place associated with the *Waarkal*. *Whadjuk Nyoongar* Cedric Jacobs explains how these kinds of 'water sites' continue to be spiritually and ecologically significant:

It is through the lake system. There is a water serpent down there below which is extremely important and the water on the surface is really the marks where the *Waugyl* wound his way through and came up after making the streams and the waterways. It's all part of the ecological system to purify the land and the family. Once it was surrounded by waterways and if they fill them up with rubbish then the land begins to die.<sup>47</sup>

As mentioned earlier, *Nyoongar* offer accounts of how the *Waugal* created the *Beelias* (river) by "making its way down the river, creating the bends at Belmont and Maylands before emerging through the Narrows into Perth Water to create the large expanse of downstream water".<sup>48</sup> Vinnicombe<sup>49</sup> and Bates<sup>50</sup> both observe that the *Waugal* is also believed to have created permanent water sources at places where it rested, and a number of these locations subsequently became important centres for trade and exchange.<sup>51</sup>

The study area sits within proximity to places that are central to *Waugal* narratives. *Whadjuk Nyoongar* people believe that the *Waugal* can be a destructive force if not respected or if its resting place is disturbed, and that if this happens all the water will dry up.<sup>52</sup>

*Whadjuk/Balardong* Elder Dorothy Winmar recounts:

They reckon without the *Waakal* around they would have no water. They would not let the kids go and torment the *Waakal*. They (*Nyungar*) would drive them away. There is a *Waakal* in the Swan River and he very rarely shows himself. If the water was muddy, the old grannies used to say don't swim in there, because he is having a feed. Don't swim (*warra wirrin* or bad spirit); wait until the water is clear then you can go and jump in (*kwop wirrin* or good spirit). He was very important to their lives, because they believed in having fresh water. They wanted the water, so they wanted the snake to stay alive.<sup>53</sup>

The effect of disturbing areas important to *Waugal* can be devastating to people's health and the

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<sup>47</sup> Laurie, M (ed.) 2003, 'Interview with Cedric Jacobs', Town of Vincent Local History Collection (Oral History Collection), Perth, Australia.

<sup>48</sup> Australian Interaction Consultants (AIC) Report – City of Fremantle.

<sup>49</sup> Vinnicombe 1989, p. 17.

<sup>50</sup> Bates 1966

<sup>51</sup> Hammond, J.E. 1933 *Winjan's People: The Story of the South West Australian Aborigines*. Perth: Imperial Printing.

<sup>52</sup> Armstrong, F.F. 1836. Manners and habits of the Aborigines of Western Australia. *Perth Gazette* 1836. Bates, D. 1985. (Ed. White, I). *The Native Tribes of Western Australia*. Canberra: National Library.

<sup>53</sup> Winmar, Dorothy. 2002. Oral Interview. Transcribed in 2002. Cited in Nidja Beelias Boodjar Noonookurt Nyininy: A *Nyoongar* Interpretive History Of The Use Of Boodjar (Country) In The Vicinity Of Murdoch University. L Collard, S Harben. Murdoch University.

future of a place.<sup>54</sup> For example, *Whadjuk Nyoongar* Elders reported “when C.Y. O’Connor wanted to create Fremantle Port, he used explosives to blow up the [sand] bar [*Yondock’s* tail] across the Swan River. This created a salt-water environment in what was once a fresh water environment and caused great distress to the *Nyoongars* at the time”.<sup>55</sup> Some suggest that *Nyoongar* then put a curse on him causing him to suffer enormously from poor mental health, eventually causing him to ride into the water near Robb’s Jetty and shoot himself.<sup>56</sup>

## 5.0 The significance of the survey site

As outlined above, there is good evidence that the areas in proximity to the Alkimos site have long been important to *Nyoongar*. In considerable measure this is because of its proximity to the lakes and water sources to the near east, the abundance of food resources, the availability of sheltered camping spots on the east and further to the east of the site and the presence of the symbolic Pinnacles or standing sandstones structures inside the boundaries of the site.

In addition, there is some evidence from previous work and oral evidence from participants in this survey that indicates the survey site includes areas of significance. This evidence has so far not been strong enough to trigger requirements for action under the current Aboriginal Heritage Act. However, it is important to note the observations of *Nyoongar* participants as:

- 1) Development WA has already indicated a willingness to respect some of the recommendations of earlier *Nyoongar* survey teams in respect of the area known as Pinnacle; and
- 2) Development WA may wish to move beyond compliance with the Aboriginal Heritage Act for engagement, cultural interpretive, naming and other planning purposes.

## 5.1 The Pinnacles

The area initially visited as part of the walking elements of the survey is known as the ‘pinnacles’ or Romeo Road Pinnacles. These limestone casts of remnant tree roots have been the subject of previous heritage surveys. In the 2017 O’Connor (2017) survey Mr Shaw stated that the pinnacle outcrops are “believed by the *Whadjuk* representatives to be of spiritual significance to our ancestors.” Goode and Harris’s study (2019, p. 5) concluded that this area be treated as important to *Whadjuk* people’s heritage and recommended that in relation to proposed extensions of Romeo Road “Main Roads investigate ways to avoid the standing limestone rocks located within Place ID 37478 (Pinnacles).”

Indeed after a previous heritage survey a submission was made to have this area registered as an Aboriginal heritage site. This was rejected by the Aboriginal Cultural Materials Committee instead opting to map it as Place ID 37478 *Romeo Road Pinnacles* “Stored Data / Not a Site” in the Register of Places and Objects. This area is close to the boundary of the works for the extension of the railway

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<sup>54</sup> Palmer, Kingsley (1976). Aboriginal oral tradition from the south west of Western Australia. *Folklore*, No. 87. pp. 76-80.

<sup>55</sup> Collard, L., L. Stocker, and A. Rooney. 2013. *Nyoongar Wardan Katitjin Bidi - Derbal Nara*. Australia: City of Cockburn and Curtin University Sustainability Policy (CUSP) Institute.

<sup>56</sup> Len Collard, personal communication, February 17 2016.

line and had previously been on the proposed route for the Romeo Road extension. Technically assessing this area in this way of protection means that Development WA has not obligations under the Aboriginal Heritage Act. Goode and Harris (2019) conclude of the Pinnacles area:

Place ID 37478 Romeo Road Pinnacles is located 340m to the east of the roundabout at Marmion Avenue and has a 700m x 700m extent that overlay the proposed extension of Romeo Road. This place will be directly affected by the road works required to extend Romeo Road to Marmion Avenue, however as the area was assessed by the APMC as stored data Main Roads has no further obligations under the AHA to proceed.

However, those involved in the two-day survey carried out by Moodjar confirm the view of some earlier *Nyoongar* consulted that the Pinnacles have high cultural values. Mr Simmons had the most to say about their cultural significance:

The Pinnacles here ... when I was about 17 out at the Gnangara Community, where Ken Colbung, Pop *Nyanjen* was ... he brought some old people down from the Pilbara and they were showing him these Pinnacles and places and telling him they still had stories for them ... and he kind of already knew that ... there was this specific place in Clarkson where they used to come and sit and they showed him ... all these Pinnacles go all the way through to *Yamatji* country ... all the way through ... so it's a marker for the people coming down and they sit just off the coast and go through in to the Clarkson area.

Furthermore during the archaeological survey (see previous comments) other examples of these limestone pinnacles were observed throughout the survey area well beyond the previously small rectangular mapped area. Mr Simmons made this clear:

Dennis: The map is the *Wadjela* concept ... when we say that this is a pinnacle area we are not just talking about here, it goes all the way right through (points north), all the way down to Clarkson (points south). This is the pinnacle area. It cuts right across there (points east across the railway line works). Even though they now might have a boundary or a road it doesn't separate the pinnacles. It is all one part of a very big area.

Len: Dennis, how far have you observed the Pinnacles going back towards the east?

Dennis: At least a kilometre east. Back where they have housing development they would have been there as well. As we start to go back a few years there was not much regulation and support for culture.

When I was 17 and old Pop *Nyanjen* first brought me out he was with old people from the Pilbara with him. They still had stories for this place ... 37 years ago when we came out to this place. We know that this is a significant area and so this should be researched properly.

It is also important to note that Mr Simmons, Mr Garlett and Professor Collard all observed damage to one of the pinnacles in close proximity to the western side of the fenced off area for the works of the railway line. Adjacent to the remains of the damaged pinnacle broken fragments lie in a section of bush damaged by a vehicle.

Mr Simmons had this to say about the extent of the Pinnacles:

The Pinnacles were right through this area. The Pinnacles were all the way across and all the way back down to Clarkson and all the way back through to where the Pinnacles are just out of *Yuat* country (*Nambung* National Park) are all significant and are all part of the same story. The old people that used to come from the Pilbara used to talk about these places as markers for them as well. Because from here, from the *Wardanji*, from the ocean straight across these hills, straight through is *Yanchep* or *Yanjet*. That National park was a holding place that sits right on the edge of *Wadjuk* country and *Yuat* country and it was a holding place for the old people coming from the Pilbara. Because from here there was a big food source, lots of water, lots of plants, lots of stuff they could use for making tools. But then just from there, just along these dunes way down here is the *Warduntji* (ocean). A lot of the Pilbara people were saltwater people so from there they could come down and hunt in the salt water. Just at the back of *Yanchep* was a big corroboree ground. And so the *Nyoongar* used to put the Pilbara people there. So from there not only did they have the fresh water, a big massive watercourse that is all swampy but they had the ocean just here.

These Pinnacles are all part of that story. When we first came out here and I showed them the Pinnacles here before they had this road in the contractors were a little bit arrogant about it. They said 'we got to bulldoze through here, we got to put this railway line in'. They weren't as open as they should be to the significance of the area.

Pop *Nyanjen* and the old people brought me out the first time when I was 17 and they were talking about these Pinnacles then.



## 5.2 Other signs of Nyoongar use of the site

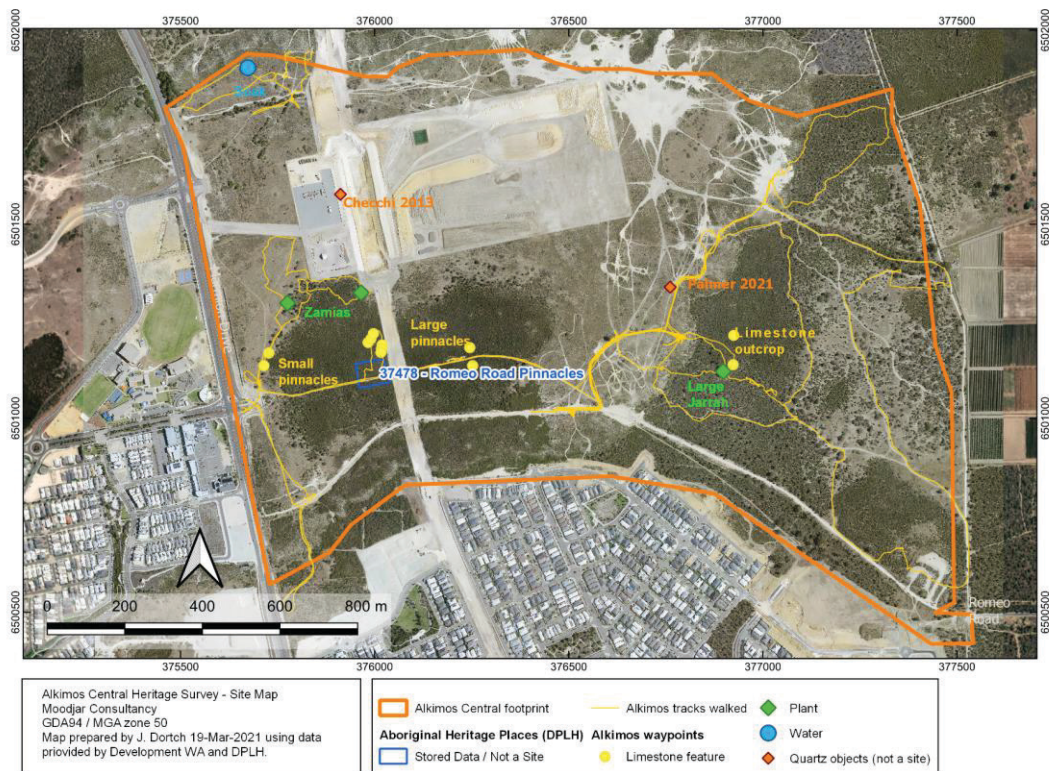


Figure 6: Map of key areas in the site

A previous heritage survey recorded the presence of quartz on the survey site. On October 2017 as part of a larger survey of the 'Northern Suburbs Railway Extension' *Nyoongar* participants and anthropologist Rory O'Connor visited the site of the proposed Alkimos Station. They walked to the areas of the proposed car park adjacent to the proposed railway station and carried out an on-the-ground inspection. Here pieces of quartz were found. This survey report noted "Dennis Simmons and Chris Shaw identified some isolated pieces of quartz scattered about an area measuring four metres by four metres at 375912E 6501577N" (O'Connor 2017, p. 4). It is estimated that this area was somewhere south of the soak marked on Figure 6.

O'Connor observed that as there are no naturally occurring quartz outcrops in this immediate area this was significant. Furthermore three of the pieces showed "signs of having been worked, with an evident bulb of percussion and fashioned edge" (O'Connor, 2017 p. 4). He formed the view, along with the Whadjuk representatives, that these isolated items did not constitute an Aboriginal site. However, he further stated that "they do however, point to former Aboriginal occupation and justify the request of the Whadjuk representatives to have monitors present when the land is being cleared for station construction." (O'Connor 2017, p. 4).

On the afternoon of the 27<sup>th</sup> of January a small scatter (five) of quartz was found near the top of the one of the highest sand hills in the survey site a considerable distance from the area where O'Connor's team had found quartz 4 years earlier.

The method of 'reading country' provided some insights into *Nyoongar* use of the site. Using the *Nyoongar* methodology of '*jenna, jen, jen koorliny wer weirn*' (walking along with spirit) Len and Phil Collard walked together making observations about the fauna, talking to one another and 'the old people' about places they considered to be most likely camping zones and listened back to the responses in the wind, the presence of certain birds and what would then reveal itself in the form of gullies, large trees and, in this case old and large *balga* trees. At one point after talking about the old grandparents Len and Phil Collard came across two Boobook Owls nestled deeply and unobtrusively under a *balga* tree that is estimated to be between 3-400 years old. (This was within close proximity where the Large Jarrah is marked on Figure 6.)

Len observed:

Len: These are the two old law people sitting there and looking after this place. Our old grandfathers taught us that it was very rare to see these owls in the day and when you did you ought to come straight home. For us this is a very important sign that we are being looked at and that the old people have long been in this place.

'Reading the boodjar (landscape)' revealed to Dennis Simmons that the dune system separating the western scrubland from the eastern timber and *zamia/balga* forest (represented by the green line of vegetation to the west of the Large Jarrah marked on Figure 6) is a place of importance:

Dennis: So these particular places that sit up high, nice and flat, even though non-Aboriginal people have been involved in this area, you can still see that it is still nice and flat and it overlooks the *boodjarda* country here and it faces towards the sun so the *ngank ngarda* where the sun rises where we do ceremony and the *ngank ngarda* sets behind us at the *Wardanji*. So these particular places here you can see are significant ceremonial places for corroboree and *kenni*. So here and you got your little spaces down in there (points west) where people can get ready and prepare (he turns towards the top of the dune system) and then here the ceremonial space overlooking the country, facing and waiting for the sun to come up. So these are very significant places. There are a few of them here. There is one here and one further towards Yanchep as well. And it is no accident that coming from Yanchep to these ceremonial grounds all the way back down to the *Wardanji* to the ocean, so significant places.

Independently Freda Ogilvie came to similar conclusions about the importance of this particular area using a similar method of 'reading country' as she stood on top of a sand dune system on the seaward side of the site and pointed east down the edge of the dune system. This sand dune system separates the dense shrubby *kwongan* heathland that is a feature of the western side of the site from a rich *balga*, firewood banksia and eucalyptus woodland with a small stand of jarrah. Freda pointed out that the change in ecology would have corresponded with a change of use by *Nyoongar*. (Where the dune system ends and the woodland area begins can be clearly seen where the green vegetation line ends to the west of the Large Jarrah marked on Figure 6).

Freda: Yeh here there is a good windbreak just right behind here and then you go into a gully. So the old people would have camped on that side (points to east) if it was windy or if the rain was coming and then they would head further east for safety (from the weather).

Coming to conclusions in a similar way Len observed:

Len: So to highlight that further east there is a big chain of lakes over there. The Yanchep

Lakes. There is a whole string of them. So here is the edge of the ecology where it is changing from good country so to speak to country that is a bit scratchy and scrapy.

Another important feature of this process of 'reading country' is that it is passed along from one generation to another, making it important to include young people in the work. This happened during the survey. For example, Len and Phil Collard found a place they considered a *nyinninup* (sitting place). (This area is marked on Figure 6 as the Large Jarrah). Later they discussed this place with the group:

Len: *Nyoongar* would often cut the trees and make scars. Maybe these scars are cut or not. They would take the wood from trees to make *miros* (spear throwers). I once went to a place where the people had stripped trees to make *miros*. The other thing is these scars can be signs, signs put there to tell people whether they are a man's site or a woman's site. So there is a range of different rationales for why these trees are scarred. For example, back down at home there at Davilak Lake, if you wanna go and see signs on all those Tuart trees they are wicked. And what they are saying is that there is a site here to do with either men's things or women's things. So there are like sign-posts, stop, go, beware. So there are all these readings that *Nyoongar* used trees and signage for. We are bringing Narelle today as a younger one to remind her about her connection to country and about some of the things that she needs to be aware of in the future. The same as Faron. So in the future, when Archaeologists or Ethnographers bring you out you are going as informed people. You are not *dwangaburt*, *kaat wara Nyoongar* you are going as an informed person who can look for the signs of our people's tracks and trail and impact on country, so you know what you are looking at.

Dennis Simmons noted the subtle but important sign of *Nyoongar* use of the site by noting important gullies that ran adjacent to the pinnacles (100 feet south west of the area marked on Figure 6 as Large Pinnacles):

These gullies here are really important because the old people use to sit in there, they used to camp in there because it is low and it stops the wind coming from the *Wardantji* (ocean). But also when they were hunting the young fellas would be pushing the *yongas* (kangaroos) over the hill and bringing them down and the old people would be waiting in those gullies for them with their spears and spearing them as they flight on down the hills and staggering and going on. The gullies are significant and most *Nyoongar* s know this.

Again 'reading country' as he had been taught as a young man Len Collard made observations about the likely importance of the wooded area on the east side of the dune system (the green vegetation area in proximity to the area marked as Large Jarrah in Figure 6).

(As we were walking down from the sand dune) I was talking to Phil Collard as we stood on top of the escarpment looking down (east) into this valley and there is a clear demarcation from the west to here. One of the first things we saw was these big *jarrahs*. They have got a natural attraction that you just want to come down and see what was going on. So to me, if I for example was saying to you fellas 'tomorrow I'll meet you in this valley' my feeling would be without even saying that people would come here and just wait at these trees. We are standing here in the afternoon, probably about three o'clock, beautiful breeze from the southwest is blowing, the canopy from the tree is really cooling the site down. So for me it

seems like it is a natural spot for people to come and sit or wait or meet. It hasn't be cleared or burnt for goodness knows how long. This area has beautiful big jarrahs that may be two hundred years old. A nice feel, got a great attraction, a big lot of *balgas* (grass trees) around here that must be hundreds of years old. There is zamia palms, the *gilget*, there are banksias, a whole bunch of stuff. To me it's a natural spot where people would meet.

Phil Collard shared Len's conclusions about the likelihood of this area being important for camping and resting: "Looking at the trees ... plenty of grass trees ... they are pretty old". He later observed of a particular *balga* (grass tree) near this area, "last weekend we celebrated Australia day and this grasstree here is a lot older than the first Australia Day. He'd be over three hundred years old." (this is approximately 50 metres east of the area marked as Large Jarrah in Figure 6)

## 6.0 Recommendations

While no archaeological sites are currently evident in the survey area, a number of *Nyoongar* custodians consider the pinnacles area, the sand dune systems and wooded area to the east of the sand dunes are areas of *Nyoongar* cultural significance.

It is on this basis the following is **recommended**:

1. Proponent staff and contractors should be informed of the legal requirement to avoid disturbance to any Aboriginal site as defined in the Aboriginal Heritage Act 1972 (Western Australia), whether registered or otherwise, and the view that disturbance of a site includes ground disturbance, souveniring or deface.
2. The area of the pinnacles should be preserved and the subject of further ethnographic and archaeological research, mapped using aerial photography shot on drone transects, as pedestrian access is difficult. More detailed and accurate heritage information could then be submitted to DPLH for reconsideration as an Aboriginal heritage site.
3. As much of the wooded area that has thick *balga*, zamia palms, some jarrah and other flora on the eastern side of the sand dunes should be preserved. Clearing of any wooded areas could be undertaken by a *Nyoongar* business.
4. Prior to any ground-disturbing work, Development WA should consider engaging suitably experienced *Nyoongar* to act as monitors of the works in case sub-surface heritage material is inadvertently unearthed. This work should be carried out in association with a suitably qualified archaeologist and anthropologist. Development WA should see this work as a further opportunity for a *Nyoongar* business to manage this work and/or have a *Nyoongar* with expertise in *Nyoongar* knowledge systems and methodologies.
5. Development WA explores 'engagement' opportunities to undertake work with *Nyoongar* knowledge experts to identify *Nyoongar* interpretive information to be used throughout the site (for example, *Nyoongar* identification and protection of flora and fauna species, *Nyoongar* involvement in the concept planning, interpretive signage, timber harvesting and replanting work, revegetation, street naming, landscape plans for public areas, information for homeowner packs, sand dune walkways or trails).



6. In any future heritage survey work Development WA make arrangements for a pre-survey planning meeting to bring together the archaeologist, ethnographer, project manager, *Nyoongar* consultants/experts, representatives from the proponent parties. This goal of this meeting will be to brief consultants on the scope, previous heritage work, resolve logistics questions and strengthen opportunities for engagement.
7. That in future Development WA consider ways in which Aboriginal heritage assessment and protection can move beyond a compliance to an engagement approach. For example, work with other partners to undertake a region wide assessment of the Aboriginal heritage values from Alkimos to Moore River. A *Nyoongar* led team should undertake this work in conjunction with: *Nyoongar* knowledge experts, ecologists, hydro geologists, flora and fauna-specialists (as well as archaeologists and ethnographers).

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# Archaeological survey of a proposed development area at Alkimos, Western Australia

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Report prepared for  
Moodjar Consultancy

Joe Dortch

March 2021

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### **Geographic Co-ordinates**

Geographic co-ordinates in this report are based on the Map Grid of Australia and use the Geocentric Datum of Australia 1994 (GDA94) datum. Co-ordinates in this report were obtained using Garmin Etrex and Legend hand-held Global Positioning System receivers. The manufacturer states that these devices are on average accurate to within 10 metres.

### **Disclaimer**

This report has been prepared from information available at the time of research and writing. Dortch & Cuthbert Pty Ltd is not responsible for any omissions of or inconsistencies with information that may subsequently become available.

### **Project reference**

The Dortch Cuthbert reference is 0223.



## **Executive Summary**

### **Project background**

On 27 and 29 January 2021, an archaeological survey team inspected a proposed development site at Alkimos (City of Wanneroo Local Government Area) where Development WA (the proponent) propose to create a new commercial centre and residential development (the survey area; Maps 1, 2) referred to as “Alkimos Central”. The archaeological survey team comprised six Noongar consultants, and archaeologist Joe Dortch, project manager Len Collard, camera-person Miranda Chirida, and anthropologist Dave Palmer of Moodjar Consultancy. The same team conducted an ethnographic survey in parallel (Palmer 2021).

### **Previous archaeological research and surveys**

Archival research showed that the survey area contains no known Aboriginal sites with archaeological components, but it does include limestone outcrops known in Western Australia as “pinnacles”, or limestone root-casts. The pinnacles in the survey area are mapped as Place ID 37478 *Romeo Road Pinnacles* “Stored Data / Not a Site” in the Register of Places and Objects maintained by the Department of Planning, Lands, and Heritage (DPLH). Despite this downgrading of protection, Place ID 37478 is reported to have high cultural values and has largely been avoided by previously approved development work within the survey area. The site can be identified from the physical extent of pinnacles on the surface, which suggests Place ID 37478 is mapped incorrectly. The survey team identified numerous pinnacles outside of the mapped rectangular area currently defining Place ID 37478.

There are numerous heritage sites within 5 km of the survey area. The nature of these sites and other regional archaeological evidence indicates that stone artefact scatters, limestone features, modified trees and burials may be found in or near the present survey area, including material concealed by vegetation or below ground surface. Any well-preserved archaeological sites would be of value to archaeological research in the region as well as having probable Noongar cultural or broader community significance. Much of the survey area has not been cleared or excavated, and therefore has some potential to contain yet-unidentified archaeological material. It should be acknowledged that the survey area contains no obvious water sources, which are attractors for past Aboriginal occupation, and therefore the survey area probably has a lower potential for containing archaeological material than other areas that have better water sources.

### **Archaeological survey methods**

The survey method comprised surface inspection of the survey area. The inspection was partial because of dense plant cover in most areas. The team inspected firebreaks, tracks, and natural exposures of the ground surface. The team recorded the positions of surveyed areas with hand-held GPS units accurate to +/- 10 m (a Garmin Legend HCx30 and a Garmin GPS60). Some areas were inaccessible due to current development work (previously approved) or very thick vegetation. Nevertheless, the survey team was able to assess about 64% of the survey area.

### **Archaeological survey results**

The survey located no archaeological sites in the survey area but did identify points of interest, including (1) the pinnacles in and around Place ID 37478; (2) ancient soils that potentially contain evidence of early Aboriginal occupation; and (3) groves of culturally important plants (Map 2).

The proposed development work will involve ground clearing and excavation and therefore could disturb presently concealed archaeological material if it is present, including burials/skeletal remains. Therefore, some form of archaeological monitoring of clearing and ground-disturbing work is desirable.

### **Recommendations**

While no archaeological sites are currently evident in the survey area, the survey area holds importance for Noongar custodians in the form of pinnacles and culturally significant plants. In addition, the soils of the survey area may conceal archaeological evidence of Aboriginal occupation.

On this basis, it is **recommended**:

1. The area of the pinnacles should be mapped using aerial photography shot on drone transects, as pedestrian access is impractical due to thick vegetation. With the additional ethnographic commentary recorded in the survey (Palmer 2021), more detailed and accurate heritage information could then be submitted to DPLH for reconsideration of the area of pinnacles as an Aboriginal heritage site.
2. Prior to any ground-disturbing work, DevelopmentWA should consider engaging suitably experienced Noongar people to monitor the works in case sub-surface heritage material is inadvertently unearthed. An archaeologist should also be engaged on a call-out basis should monitors require further assessment of any suspected heritage material.
3. Protection of mature trees is important for Noongar consultants and should be considered wherever possible.
4. An Aboriginal Cultural Heritage Management Plan or similar should be developed, before ground disturbance occurs, to allow for culturally appropriate management of any discoveries of suspected or actual heritage material.
5. The Aboriginal Cultural Heritage Management Plan should include a requirement that staff and contractors should be informed of the legal requirement to avoid disturbance to any Aboriginal site as defined in the *Aboriginal Heritage Act 1972* (Western Australia), whether registered or otherwise, and the view that disturbance of a site includes ground disturbance, souveniring or defacement.

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**Terms used in this report**

ACMC	Aboriginal Cultural Materials Committee
AHA	<i>The Aboriginal Heritage Act 1972 (WA)</i>
AHIS	Aboriginal Heritage Inquiry System
BP	Before Present – for the purposes of reporting radiocarbon dates, “present” is 1950.
DAA	Department of Aboriginal Affairs, former administrator of the Register of Places and Objects. Also known previously as DIA, Department of Indigenous Affairs.
DPLH	Department of Planning, Lands and Heritage, administrator of the Register of Places and Objects
GDA94	Geocentric Datum of Australia 1994. The datum used for the MGA (see below).
GIS	Geographical Information System: software for analysing and presenting spatial data.
GPS	Global Positioning System, a group of high-orbit satellites communicating with individual mobile transceivers, enabling accurate locations.
MGA	Map Grid of Australia. A map grid used for Global Positioning Systems and Geographic Information Systems coordinates including the DPLH Register.
Noongar	The Indigenous people and Traditional Owners of south-western Australia. Alternative spellings include <i>Nyoongar</i> and <i>Nyungar</i> .
NTA	<i>The Native Title Act 1993 (Commonwealth)</i>
Register	Register of Places and Objects – the Western Australian government’s list of Aboriginal heritage places and other heritage materials, accessible on-line.
SWALSC	South-West Aboriginal Land and Sea Council
UTM	Universal Transverse Mercator (map projection)



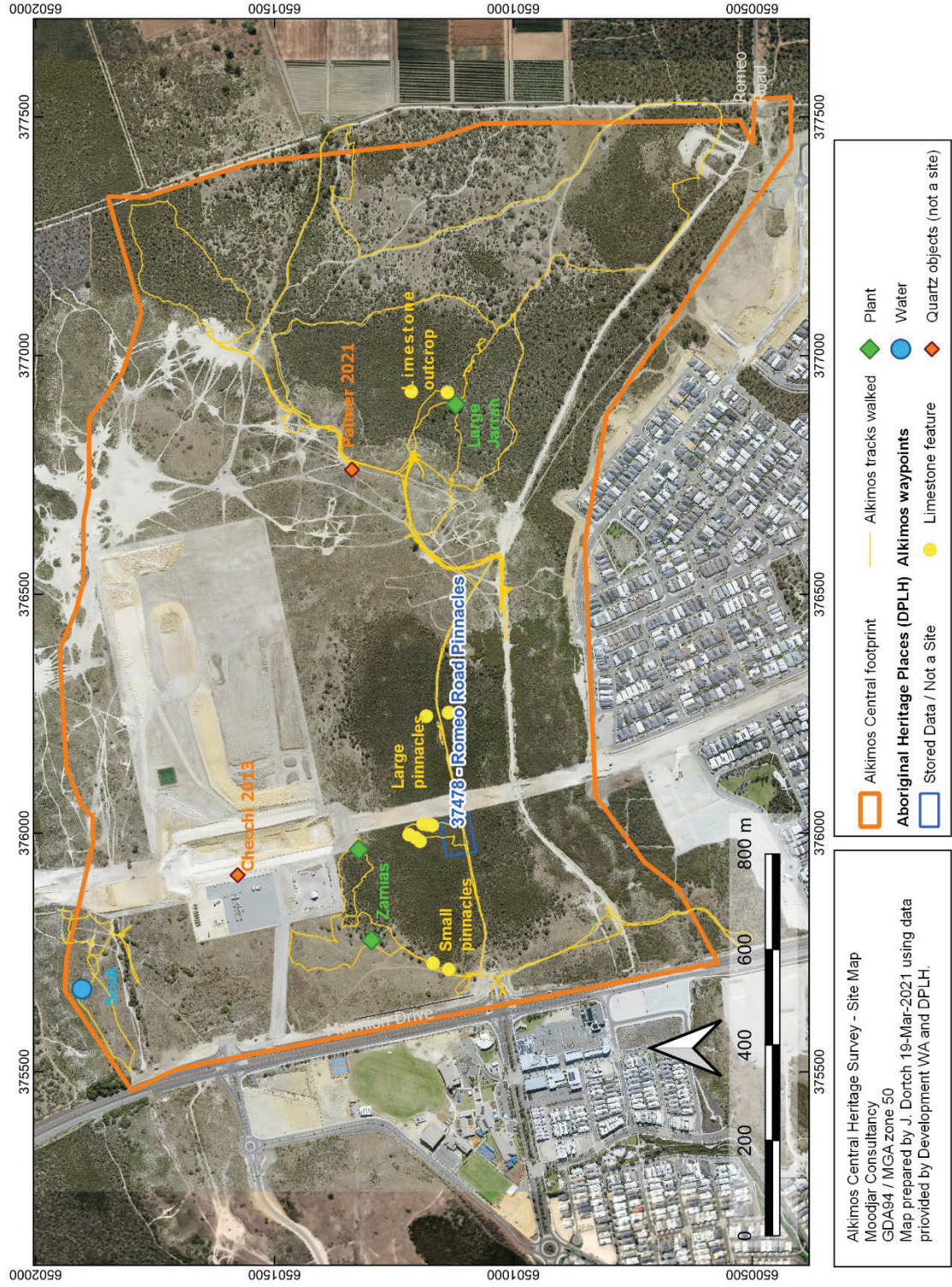
Alkimos Central Heritage Survey - Site Map  
 Moodjar Consultancy  
 GDA94 / MGA zone 50  
 Map prepared by J. Dortch 19-Mar-2021 using data  
 provided by Development WA and DPLH.

 Alkimos Central footprint	 <b>Aboriginal Heritage Places (DPLH)</b>
	 Stored Data / Not a Site

Map 1: Survey area



Aboriginal heritage survey for the proposed Alkimos Central Project



Map 2: Heritage survey results

City of Wanneroo (2016) *Local Heritage Survey 2016*. City of Wanneroo.

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McDonald, E., Coldrick, B. and Villiers, L. (2005) *Study of groundwater-related cultural values of the Gnangara Mound*, Western Australia. WA Department of Environment.





**Photo 3: View west over introduced pasture grasses in the western part of the survey area – typical of the northern half of the survey area before the current construction project began.**



**Photo 4: View south-west over steep mobile dunes in the north-western part of the survey area**





**Photo 5: View north of reeds growing in the small soak in the north-west of the survey area**



**Photo 6: View north-east over dune blow-outs in Quindalup-type sands in the centre of the survey area. The current construction project is visible in the background.**





**Photo 7: View north-east over extensive area of Banksia woodland in a dune swale in the south-east quarter of the survey area. Some of the survey team in middle ground.**



**Photo 8: Narelle Ogilvie standing near an old balga in the south-east of the survey area**

## **Introduction**

On 27 and 29 January 2021, an archaeological survey team inspected a proposed development site in the suburb of Alkimos (City of Wanneroo Local Government Area) where DevelopmentWA (the proponent) propose to create a new commercial centre and residential development (the survey area; Map 1) referred to as “Alkimos Central”. The archaeological survey team comprised Joe Dortch (PhD, Archaeology UWA) and Noongar consultants who also advised the ethnographic survey.

The survey aimed to identify any archaeological places within the survey areas that may constitute sites under Section 5 of the *Aboriginal Heritage Act 1972* (the Act); and to record them in sufficient detail to inform recommendations for their management. An additional aim of the survey was to support the identification and recording of any features or materials of general Aboriginal cultural significance. Archaeologist Joe Dortch (PhD, Archaeology) and Noongar representatives conducted the archaeological survey. Whadjuk Traditional Owner Len Collard of Moodjar Consultancy managed and coordinated the survey fieldwork for the respective archaeological and ethnographic components. Anthropologist Dave Palmer (PhD, Sociology & Anthropology) undertook ethnographic research with the Noongar consultants at the same time (Palmer 2021).

This report details the findings of the surveys and provides recommendations to Moodjar Consultancy and DevelopmentWA.

## **Project background**

DevelopmentWA, which is part of the Western Australian Government, proposes to manage the construction of a commercial hub to be called Alkimos Central. This project will occupy all the survey area. It will provide private and public services, retail complexes, offices, a social hub, and amenities for the 57,000 residents of the Alkimos-Eglinton District over the next two to three decades. The land on all sides of the survey area is also being developed, or will be developed, for various residential, commercial, and transport uses, including residential sub-divisions, the Mitchell Freeway extension, and shops and businesses.

## **Survey area**

The survey area covers an irregular rectangular area covering 205 ha, bounded by Marmion Drive to the west, new sub-divisions to the north and south, and market gardens to the east (some of which will become part of the Mitchell Freeway) (Map 1). The terrain in the survey area comprises rolling sand dunes and dune swales (Photos 1-7). Much of the area was converted to pastoral use some decades ago, but large parts, especially in the southern half, appear not to have been cleared or have re-growth vegetation. Currently the survey area includes areas of introduced pasture grasses (mostly across the northern half of the survey area; Photo 3), native dune vegetation (on the dune crests; Photo 4), and mature native trees and grass-trees (mostly across the southern half of the survey area; Photos 1-2, 5-8). The vegetation appears to be in good condition in parts (Photos 7-8). A north-south corridor through the entire survey area is being developed for a suburban railway (Photo 2). Currently there is evidence of substantial illicit activity in the survey area, e.g. off-road vehicle driving (including trail bikes), burning of stolen cars, rubbish dumping. These activities mostly pose minor disturbances. However, vehicle use is causing some erosion around dune crests which also feature

blow-outs (Photo 6). There is also a current development project, previously approved, in the centre of the survey area.

No spatial data were provided to the Moodjar team before fieldwork. The archaeologist geo-referenced an image of the survey area and plotted a survey area polygon based on that image, with vertices shown below (Table 1).

**Table 1: Survey area and bounding coordinates (MGA, GDA94)**

Node	mE	mN	Node	mE	mN
1	376714.23	6501888.47	18	375729.32	6500571.13
2	376868.35	6501887.96	19	376078.46	6500827.89
3	376523.96	6501900.24	20	375939.6	6500725.67
4	376656.06	6501899.47	21	376877.21	6500804.67
5	376383.27	6501950.01	22	376608.51	6500850.59
6	376465.73	6501915.92	23	377542.16	6500419.65
7	375460.42	6501798.65	24	377434.11	6500418.38
8	376059.58	6501904.05	25	377443.17	6500498.58
9	376137.27	6501935.38	26	377537.27	6500495.02
10	375505.58	6501705.06	27	377486.47	6501067.4
11	375979.82	6501879.71	28	377492.89	6500524.9
12	375505.58	6501705.06	29	377404.71	6501550.54
13	376033.85	6501880.36	30	377445.05	6501186.18
14	375670.89	6501939.16	31	377333.13	6501849.04
15	375736.98	6501935.27	32	377332.05	6501771.85
16	375460.42	6501798.65	33	376963.23	6501818.93
17	375884.41	6500654.85	34	377089.8	6501778.34

### Survey team

The Survey Team comprised six senior Noongar representatives with knowledge of the survey area, an archaeologist, an anthropologist, a cameraperson, and a project manager (Table 2). The expertise of the Noongar consultants is detailed by Palmer (2021).

**Table 2: Participants in the heritage survey**

Name	Role	Dates attending
Phillip Collard	Noongar consultant	27 Jan 2021
Betty Garlett	Noongar consultant	27 & 29 Jan 2021
Faron Garlett	Noongar consultant	27 & 29 Jan 2021
Dennis Simmons	Noongar consultant	27 & 29 Jan 2021
Narelle Ogilvie	Noongar consultant	29 Jan 2021
Freda Ogilvie	Noongar consultant	29 Jan 2021
Len Collard	Project Manager	27 & 29 Jan 2021
Dave Palmer	Anthropologist	27 & 29 Jan 2021
Miranda Chirinda	Cameraperson	27 & 29 Jan 2021
Joe Dortch	Archaeologist	27 & 29 Jan 2021



### **Study brief**

DevelopmentWA and Gundi Consulting (through Oral McGuire) asked Moodjar Consultancy to undertake a combined archaeological and ethnographic heritage assessment of the survey area suitable for a Work Area clearance. In this approach, a survey team aims to identify all Aboriginal heritage issues within the Survey Areas, including the extents of smaller areas or places within those Survey Areas that require management or protection. From an Aboriginal heritage perspective, the balance of the Survey Area that does not require management or protection is then cleared for development. The survey involved:

- a summary of the potential legal obligations for the proponent,
- a desktop review of relevant past heritage findings and background materials in the literature of the area in question,
- a field inspection of the survey area with representatives of the traditional owner group,
- a summary of field results, and
- formulation of cultural heritage management recommendations.

The work by Moodjar Consultancy was to include assessment of an area of limestone pinnacles, known as DPLH Place ID 37478 *Romeo Road Pinnacles*.

### **Impact of proposed work**

From the point of view of protecting heritage material, the primary concern with any proposed project is the impact on heritage sites. As part of this concern, archaeologists are concerned with the extent of ground disturbance of previously undisturbed or *in situ* archaeological deposits.

The proposed work also involves clearing vegetation in the survey areas and large-scale excavation in advance of construction of roads and buildings. These activities may alter any archaeological remains down to the depths of excavations for foundations, footings, pilings, etc, because such heritage material could be either destroyed, or removed from its stratigraphic context. These disturbances may also impact ethnographic (cultural) values.

### **Legal obligations**

Proponents should be aware of any legal obligations or potential legal obligations they may have in relation to ground-disturbing activities they propose to undertake. For small to medium scale exploration works and minor infrastructure in Western Australia there are two main Acts the proponent should be aware of – the *Aboriginal Heritage Act 1972* (WA; the AHA) and the *Native Title Act 1993* (Commonwealth).

The principal Act in Western Australia through which nearly all Aboriginal heritage is managed is the AHA. The proponent should be aware that under this Act:

- It is an offence to disturb or alter Aboriginal sites or objects, whether they are registered under s17 of the AHA or not, unless consent to do so has been granted by the Minister of Aboriginal Affairs (WA).
- All land users who wish to use land for a purpose which might contravene s17 of the AHA must exercise due diligence in trying to establish whether their proposed activity in a

specified area may damage or destroy an Aboriginal site. A land user is obliged to comply with the provisions of the AHA and failure to do so may result in prosecution.

- If a proponent wishes to use the land in a manner that impacts an Aboriginal site, they may do so only with permission from the Minister for Aboriginal Affairs under s18 of the AHA. Section 18 applications are made to the Aboriginal Cultural Materials Committee (ACMC), which advises the Minister. Depending on the level of significance accorded to a site, which is determined through comprehensive ethnographic and archaeological investigations, the ACMC may advise that a s.18 permit is allowable.
- All Aboriginal sites are protected by the AHA, whether or not they have previously been identified or registered, provided that the site can be determined to meet the definitions under s.5 and s.39 (Appendix 1).

Though the AHA is the principal heritage Act in Western Australia, particularly in relation to the activities of the mining and construction industries, many proposed new works in the state are located on land subject to native title claims and/or falling under areas controlled by heritage agreements.

In the former Noongar native title claim area, the South West Settlement Agreement between the Western Australian state government and SWALSC effectively removes native title while providing certain rights and benefits to Noongar (Noongar) people. Although this agreement eliminates the old “Future Acts” regime in the former Single Noongar claim area, ground-disturbing activities by Government proponents will still be subject to heritage agreements appropriate to the level of impact. In the case of the Alkimos Central project, the South West Settlement Agreement requires DevelopmentWA to enter into a Noongar Standard Heritage Agreement with Whadjuk people governing the conduct of the survey.



## **Background**

This section addresses environmental characteristics of the survey area to indicate survey conditions for potential future work, and the locations and nature of Aboriginal sites in the survey area. It also discusses Aboriginal land-use history and nearby archaeological research and surveys to help ascertain the significance and distribution of potential archaeological sites in the survey area.

## **Environment**

In south-western Australia, past Aboriginal settlement patterns relate to the marked seasonal climatic changes of the Mediterranean climate (Anderson 1984). Oral and written histories indicate that people gathered in large groups for relatively long periods in coastal areas near lakes and streams in the dry summer and dispersed inland in small groups in winter. The survey area is some 2 km from fresh-water lakes and swamps. Freshwater lakes were particularly important for historical groups of Noongar people (Green 1979).

The survey area is located on the Swan Coastal Plain, which represents the surface sediments of part of the Perth Basin (Geological Survey of Western Australia 1990). The Swan Coastal Plain is formed almost entirely of aeolian or alluvial sands and silts (McArthur 1991). The alluvial deposits are mostly at the foot of the Darling Scarp, 30 km to the east. This sedimentary context has two implications for archaeology in the survey area.

Firstly, the coastal plain is largely devoid of hard rocks with conchoidal fracture, implying that any rock in the survey area, that is suitable for stone artefact manufacture, is likely to derive from a source such as the Darling Scarp, which forms the western rim of the Yilgarn Craton. Artefacts may also be made from Eocene fossiliferous chert, a rock thought to be outcropping on now-submerged parts of the palaeo-Swan Coastal Plain west of the present shoreline (Glover 1984). Before sea-level rises that terminated at about 5,000 BP, Aboriginal people quarried this rock for stone tools, and through seasonal movements over the region, discarded thousands of fossiliferous chert artefacts at locations across the presently emergent parts of the coastal plain (Hallam 1987).

Secondly, the types of dune systems, deposited during successive high sea-level stands, indicate the age range and significance of archaeological materials found in them. The dune systems (Bassendean, Spearwood, and Quindalup) are arranged in successively younger parallel bands from scarp to coast. The survey area is covered entirely by sands belonging to the Spearwood and Quindalup Systems (Department of Agriculture 2003).

The yellowish-brown Spearwood dunes are Late Pleistocene to early Holocene in age (120,000-5,000 years old), have high relief, and are generally well-vegetated and stable. They interfinger with Tamala Limestone, a calcarenite formed by wind-deposition of shelly sand followed by partial or complete lithification. At the surface, the limestone can form pinnacles, created primarily by the dissolution of softer rock but also the cementation of harder calcrete in voids or around root or trunk casts (Lipar and Webb 2015). Along the west coast of south-western Australia, limestone pinnacles form extensive fields of cylindrical or conical rocks emerging from dune surfaces. They have cultural significance across the region.

Radiocarbon-dated charcoal sequences, including archaeological sites (Clarke and Dortch 1977, Ferguson 1980, Dortch and Dortch 2019), and cases of well-preserved dune-bedding suggest good potential for preservation of Late Pleistocene and early Holocene stratigraphy (Glassford and Semeniuk 1990). Yellowish sands and limestone indicating components of the Spearwood System are evident across the survey area, either directly exposed or outcropping, or in the case of the Spearwood sands, visible around ant nests.

The creamy-white Quindalup dunes are late Holocene in age (less than 5,000 years old), have high relief and are sparsely vegetated. They are being actively formed in the present high sea-level stand (and over the last 5,000 years), as wind and waves pile up sand from the sea floor onto the coastline. With prevailing onshore winds, they are mobile and advancing over some inland areas. Two factors suggest potential for finding Aboriginal burials in Quindalup dunes: (1) these sands contain a high percentage of shell, which means that they are alkaline and have potential for preserving bone, and (2) being loose and uncompacted, they also may have been more easier locations for burying the dead. Quindalup dunes cover several parts of the survey area, especially on its northern boundary and in an arc curving southward through the centre.

The survey area is located 900 m from Lake Carabooda to the east, and 1.9 km from Lake Nowergup to the south-east (Map 1). Guided by local Noongar people, the British explorer Grey (1841) recounted the name of the latter lake as “Now-oor-goop”. He notes the “good land” and abundant wetland plants and animals around the lakes in general, in contrast to the surrounding sandy country. In the surrounding region, several lakes are listed as Aboriginal heritage places by DPLH, as sources of fresh water and traditional plant and animal food resources and because of their mythological associations.

Survey area vegetation comprises dense heath and shrubland, with groves of eucalypts (e.g. *Eucalyptus gomphocephala*, Djuart/Tuart; and *Eucalyptus marginata*, Djaree/Jarra) and banksias in pockets in the eastern third (Beard 1981). Other plants found in the eastern areas include large grasstrees (*Xanthorrhoea preissii*, Balga) and zamia palms (*Macrozamia* spp., Jeeriji).

Ground visibility is only about 10% in areas of remnant vegetation in the survey area, but dune blow-outs and firebreaks give 100% visibility. Firebreaks and access tracks running throughout the survey area expose the surface sediments and artefacts in some places, allowing some assessment of the archaeological potential of the survey area. Where ground visibility is as poor as the present survey area, and the potential for intersecting archaeological remains is deemed to be high, sub-surface survey is sometimes recommended (Nance and Ball 1986).

### **Aboriginal land-use history**

Oral histories of south-western Australia are highly informative about Noongar economic and cultural practices (Harben et al. 2009, Palmer 2021 and references therein). Knowledge of these practices inform archaeology and provides important context for heritage assessments. In the Perth area, written histories are also informative because early European settlement, largely restricted to the Swan River and the Avon valley, did not stop Noongar people from traditional hunting and gathering over neighbouring regions for many decades, and they also permitted a degree of inter-cultural contact and observation (e.g. Grey 1841, Hammond 1933, Moore 1884). The following

discission emphasises historical values and written sources. Palmer (2021) reports oral histories in more detail and provides a discussion of contemporary Noongar values as an expression of these traditions.

The pre-European Noongar economy was based on the systematic exploitation of seasonally available resources in coastal and adjacent inland districts (Berndt 1979, Dortch 2002; Green 1979; Meagher 1974; Hallam 1975, 1987). Family groups travelled seasonally from their core estate territories across larger dialectal group ranges. They established marriage networks and alliances with other family and other dialect groups according to moiety and totemic affiliation. Economic activities such as trapping of fish in estuaries or firing of vegetation for resource management and animal drives, required coordinated group effort between families. Responsibilities and rights for food gathering and other activities and rituals were determined by totemic and estate affiliation.

The diversity of resources and the adaptability of the subsistence economy meant that food could be obtained almost anywhere throughout the year (Meagher 1974), but seasonal abundances and shortages influenced settlement patterns (Anderson 1984, Hallam 1987). Generally, people exploited coastal and estuarine resources in summer and moved inland in winter. Summertime gatherings satisfied social and economic needs. Sustained by large quantities of fish and wetland resources, people organised marriages and ceremonies, settled dispute, and conducted rituals during these gatherings (Dortch 2002).

Considering these interpretations of regional economy and social organisation, and the distance between the survey area and permanent tracts of surface fresh-water and wetlands, past activities in the survey area probably comprised short-term occupations. Given that historic Noongar people tended to avoid coastal storms in winter (*Makuru*, June-July), favoured seasons to visit the survey area may have been summer or autumn (*Birak*, *Bunuru* or *Djeran*), to forage for tubers, roots, fruit, seeds, reptiles, amphibians, and small mammals. The explorer Sir George Grey visited the area in December 1838 and was the guest of a large group of Noongar people living around lakes a days' walk north of the survey area (Grey 1841 (vol. 1): 296-303). In April 1839, Noongar people gathering frogs and tortoises and processing zamia nuts at one of the chain of lakes near the survey area, about 30 km north of colonial Perth, cooked some of their harvest for Grey and his party who were starving and dehydrated on another expedition involving shipwreck and a long journey on foot (Grey 1841 (vol. 2):89). Grey attributes the hospitality of the Noongar in part to his having spent some time with them before his journeys away, learning their language, and sharing food. These accounts show that substantial numbers of Aboriginal people occupied the region and enjoyed abundant resources in at least *Birak* (December-January) and *Djeran* (April-May).

Although south-western Australia's Mediterranean-type eco-system is resilient and broadly stable, the environment of the survey area has probably changed significantly throughout the Holocene (i.e. over c.10,000 years), due the rise of sea level, erosion of the coastline and constant dune movement after the end of the last glacial period (Newsome and Pickett 1997). Any yet-undiscovered older sites in the survey area dating from glacial and immediately post-glacial times may be associated with a somewhat different inland environment, e.g. featuring different vegetation, lower water table, and reduced water sources (Pickett 1997).

### **Regional archaeological research**

Current archaeological research helps assess the significance of potential archaeological sites in a survey area. In the Perth metropolitan region, current research includes four main questions (Dortch and Dortch 2019), as follows:

1. *What was the timing and the nature of the colonisation of Australia by Aboriginal people?*

Sites on the Swan Coastal Plain and in lower south-western Australia provide some of the earliest dates for human occupation of Australia (Pearce and Barbetti 1981, Schwede 1990, Turney et al. 2001, Dortch and Dortch 2019). Alluvial terraces well beyond the survey area provide the oldest of the archaeological evidence in the Perth region, but the Spearwood Dunes still contain important archaeological sites dating from at least 12,000 BP (Clarke and Dortch 1977, Ferguson 1980). Tamala Limestone may contain caves, which contain important archaeological records (e.g. Turney et al. 2001, Monks et al. 2016), including one within 10 km of the survey area at Orchestra Shell Cave (Hallam 1974).

2. *What was the nature of past interaction between Aboriginal people and environment on the Swan Coastal Plain?*

Such interaction can be analysed by comparison of archaeological and palaeo-environmental records. The location of Swan Coastal Plain sites near wetlands and on fertile alluvial soils attests to early exploitation of coastal plain resources (Clarke and Dortch 1977, Hallam 1987, Pearce 1978). Cores in lakes in both northern and southern suburbs of the Perth metropolitan region provide pollen sequences showing changes in local vegetation (Newsome and Pickett 1993, Pickett 1997). Species-identified charcoal fragments from south-western Australian terrestrial deposits can also demonstrate environmental changes (Dortch 2004). Lastly, the distribution of archaeological sites in relation to natural features, especially lakes and swamps, demonstrates the importance of water sources and nature of land use through time (Hallam 1987, Dortch and Dortch 2019).

3. *What is the evidence from stone artefacts (the predominant form of regional archaeological evidence) for change and continuity in Aboriginal economy, society and population?*

Archaeologists have investigated variations in stone artefact manufacturing technology and economy to infer changes in past Aboriginal cultures. Artefact studies in regions such as the Darling Scarp (Pearce 1978), south-western Australia (Dortch 2004, Ferguson 1980), and south-eastern Australia (Hiscock 1986, Holdaway *et al.* 2004) help characterise patterns of site occupation. Inferred domestic and economic activities include food preparation and tool maintenance and production.

Hallam (1987) uses artefact assemblage characteristics to infer Aboriginal population changes in different parts of the Swan Coastal Plain and over time. She identifies a four-phase sequence based on raw materials and technology, divided by three events: (1) the blocking of access to fossiliferous chert with sea-level rise by 4,500 BP (Glover 1984, Hallam 1987), (2) the production and abandonment of microliths (small blade-like tools), and (3) the introduction of European glass and ceramics as raw material for making edged tools in the 1800s. Hallam argues that by c.AD 1800, growing Aboriginal populations had intensified the exploitation of plant resources on alluvial deposits below the Darling Scarp and may well have intensified production further (Hallam 1989).

This research is largely supported by more recent research, with the caveat that plant management in south-western Australia may have already been intensive for some time (Lullfitz et al. 2017). Caution is also required for investigating some sand deposits that could have been disturbed by development or by natural erosion (Schwede 1990, Bowdler et al. 1991).

4. *What were the intercultural and intracultural relations at the time of European colonisation and afterwards?*

The archaeology of Aboriginal-European interaction in the Perth area, well-documented from historical sources (e.g. Green 1979), has been little investigated. Such evidence typically gives insights into hidden histories, i.e. not available from written records, e.g. details of inter-group exchange, cross-cultural interaction, technological adaptation, and domestic economy can be inferred from discarded material culture (Harrison and Williamson 2002). Study of urban fringe camps has shown how Indigenous and other cultural groups colonised unwanted land to maintain independence (Smith and Beck 2003).

There is no written evidence that Aboriginal people camped in the survey area in the historic period. It is possible that Aboriginal people hunted or foraged in the survey area in historic times, but such activities may have left little archaeological evidence. Oral histories would be highly informative on this question.

**Previous field surveys in and near the survey area**

Previous archaeological field surveys in the survey area can indicate survey conditions and archaeological potential. No published archaeological research refers specifically to the survey area, but two survey reports indicate that parts of the survey area have been archaeologically inspected (O'Connor et al. 1990, Checchi 2013). O'Connor et al. (1990) do not map their sample areas, so it is not possible to determine if they inspected any part of the present survey area. Checchi (2013) only inspected the railway corridor and ancillary areas through the centre of the present survey area. It appears that parts of the survey area may not have been archaeologically assessed before.

The DPLH Register lists 12 heritage assessments involving archaeological and ethnographic fieldwork in or adjacent to the present survey area (Table 3, Appendix 3, Map 3).

**Table 3: Previous heritage surveys in or adjacent to the survey area**

Proponent	Year	Survey area	Survey type	Heritage places found	Reference
Main Roads WA	1989	Mitchell Freeway corridor SE of present survey area	Archaeological and ethnographic	None	O'Connor et al. 1989
Landcorp	1990	Clarkson, Eglinton and Alkimos residential developments (including the present survey area)	Archaeological and ethnographic	None	O'Connor et al. 1990
Main Roads WA	1997	Mitchell Freeway corridor NE of present survey area	Archaeological	None	Harris 1997
Main Roads WA	1997	Mitchell Freeway corridor NE of present survey area	Ethnographic	None	O'Connor 1997

LWP Property Group	2008	Lot 3 Romeo Road	Archaeological	None	Thomson 2008
LWP Property Group	2008	Lot 3 Romeo Road	Ethnographic	None in present survey area	Coldrick 2008
Public Transport Authority	2013	Railway corridor	Archaeological	Artefact pile – not a site	Checchi 2013
Public Transport Authority	2017	Railway corridor	Ethnographic	DPLH ID 37478	O'Connor 2017a
Public Transport Authority	2017	Railway station area	Ethnographic	DPLH ID 37478	O'Connor 2017b
Main Roads WA	uncertain	Mitchell Freeway corridor SE of present survey area	Archaeological	None in present survey area	Not certain - DPLH did not provide report

None of the above surveys reported any archaeological sites in or near the survey area, apart from an accumulation of possible artefacts thought to derive from modern dumping of artefacts from somewhere else (Map 2; Checchi 2013; Chris Shaw, pers. comm.). The various reports suggest the lack of sites is due to several factors: low ground visibility; lack of water resources in the areas surveyed; limited Aboriginal occupation in the surrounding area. Place ID 37478, the only heritage place identified in the survey area, is an ethnographic site, based on the spiritual and historic associations of a natural feature, the pinnacles.

#### **Heritage places near the survey area**

Analysis of recorded places near a given survey area provides important context for a survey. It indicates the probable features of heritage places that may be found within the survey area, and what features make a site significant. Although surveys of areas in and near the present survey area found very few sites, a wider Register search can still provide useful context.

The archaeologist searched the register for heritage places within 5 km of the survey area, identifying 24 heritage places (Table 4). A full listing of these heritage places is given in Appendix 4.

Many heritage places have multiple features (Table 4; Appendix 4). "Closed" site files (not accessible without authority of the traditional owners named in the site file) were not examined here, because none of the "closed" sites intersect the survey area, and the site files and data that are available provide sufficient indication of the potential archaeological values of the survey area and surrounding area.

**Table 4: Summary of 24 Aboriginal heritage places within 5 km of the survey area**

<b>Features</b>	<b>Number of places with feature</b>	<b>Percent of places</b>
Mythological	14	58%
Natural Feature	12	50%
Other	9	38%
Water Source	5	21%
Camp	3	13%
Artefacts / Scatter	2	8%
Named Place	1	4%
Ceremonial	1	4%



Historical	1	4%
Modified Tree	1	4%
Rockshelter	1	4%
Engraving	1	4%
Arch Deposit	1	4%
Dated	1	4%
Plant Resource	1	4%

Table 4 shows that most places within 5 km of the survey area are mythological sites or natural features, and are identified mainly from cultural knowledge and ethnographic sources (Coldrick and McDonald 2008, O'Connor 2017, Palmer 2021). Common archaeological site types like artefact scatters and modified trees can be hard to locate in urbanised areas, which may be why they are relatively rare within 5 km of the survey area.

The “Other” heritage places listed in Table 4 are also natural features or areas with reported cultural significance, reported by Traditional Owners. There are two main types of significant feature: limestone ridges, and mature trees. Coldrick and McDonald (2008) suggest that Noongar consultants have usually identified these places as important based on a general significance attached to those features, but Palmer (2021) recounts Noongar testimony for the current survey area that indicates there is still a considerable body of knowledge about these features. The limestone pinnacles are regionally significant and have historical associations. Mature trees are also important to Noongar people as living beings creating attractive environments and opportunities to reconnect to country and history (L. and P. Collard, in Palmer 2021).

Returning to the archaeological evidence, artefact scatters, modified trees and other potential site types are summarised as follows:

*Artefact scatters* Artefact scatters are the most common site type in the state-wide Site Register, but in the survey register search, they are uncommon. An artefact scatter comprises multiple stone artefacts near each other, usually a result of repeated tool-using activities at one location, such as a campsite or work area (Appendix 1). The artefacts may be exposed on the surface or unearthed in excavation. In some regions where there is excellent ground visibility, there are many ‘isolated finds’ scattered across the landscape (also known as ‘background scatter’; Burke and Smith 2004, Isaac 1982). In the present survey area, limited surface visibility and widespread disturbances effectively remove artefacts from view. Hence the significance of any site should be assessed on cultural values and research potential, including preservation and general context, and not just artefact density. Only one artefact scatter has been recorded within 5 km of the survey area (DPLH ID 4404) – it represents artefacts recovered from excavation of a limestone cave (see below).

*Modified trees* Modified trees have been scarred for territorial or symbolic marking, scarred after removal of bark for hut-building or other purposes, or notched to improve access to animal dens. Modified trees are well-known across south-western Australia (DIA 2002), where they are usually described as large, mature trees showing evidence of scarring or notching with stone tools, and substantial bark overgrowth over the edge of the scar or notch. Scars are usually symmetrical, oval or sub-rectangular, aligned vertically with the trunk, and range between 0.5 and 1.5 m in height, and

0.25 to 0.75 m wide, with much of the scar at chest height. The scar should not reach the ground (scars reaching the ground may be the result of branches ripping from the trunk due to natural processes) and there should be bark overgrowth over the edge of the scar, indicating age. There may be signs of bark removal by a blunt instrument such as a stone axe. Notches usually appear a series of smaller, deeper cuts into the bark that allow a person to scale a tree using the notches as toe-holds. Only one modified tree has been located within 5 km of the survey area (DPLH ID 20598).

No Aboriginal burials were revealed in the Register search. Burials and human skeletal remains are highly significant to Aboriginal people. They may also provide information about past burial practices, cultural and social identity, date of the burial, and circumstances surrounding the life and death of the individual (e.g. Webb 1995). There are 22 burial/skeletal remains sites registered in the Perth metropolitan region. Half are known only from oral or written records and have no known archaeological remains. The rest, with archaeological remains, appear to have been found in the course of excavations for housing developments in calcareous shelly Quindalup sands and in yellow Spearwood sands (Dortch et al. 2007a). Further afield, e.g. in and around Busselton and Geraldton, burials have been unearthed in Quindalup-type dunes (Raaff 1996), partly as a result of development of coastal areas and partly because of coastal erosion. There may also be a tendency for more burials to be preserved in Quindalup dunes, which are less acidic. To date, no work has been done to determine if burial location relates to landscape features such as water sources or soil type that may have influenced population distribution. This makes it difficult to determine if burials are likely to be found in the survey area. However, it would seem possible for Quindalup dunes in the survey area to contain burials.

One place has 'archaeological deposits' and dated material, suggesting potential for obtaining a datable chronological record, but this designation does not mean no other sites have archaeological deposits. The place listed as having archaeological deposits is Orchestra Shell Cave (Place ID 4404), a cave in Tamala Limestone excavated by Hallam (1974). Dates for occupation at this site range from c.6500 to c.1700 years BP. The cave also contains evidence of 'finger-fluting' – grooves made with the fingers in soft deposits on its walls, hence the 'engraving' designation (Table 4). Caves may preserve rich archaeological remains, but none are known to exist in the Tamala Limestone in the survey area.

## **Methods**

Archaeological survey methods included two main tasks: a desktop review of relevant reports and literature, discussed above; and field inspection.

The archaeological field survey comprised pedestrian inspection of the areas to be impacted. The areas walked were plotted using hand-held GPS Garmin units (accurate to 10 m) loaded with an outline of the survey area boundary. Noongar consultants and the archaeologist walked meandering tracks through uncleared open bush and along the accessible firebreaks and vehicle trails.

Some areas were inaccessible due to current large-scale excavations (previously approved) or very thick vegetation. About 92 ha (43%) of the total survey area was within 50 m of the routes taken by the archaeologist and the anthropologist, who carried the GPS units, and all accessible tracks were inspected across the survey area (Map 2). Other team members generally walked up to 50 m from those carrying the GPS. About 35 ha (17% of the entire survey area) of thick vegetation was not inspected. The on-going development takes up an estimated 30% of the survey area. Hence only 10% of the accessible part of the survey area was not inspected. The 43% inspected sample of the survey area includes all parts of the survey area, so is representative of cultural heritage values across the entire area.

## Results

### Archaeological survey

The survey located no archaeological sites in the survey area. The survey team did identify several natural features with cultural heritage values, as shown in Map 2 and Table 5 (see also Appendix 5, Table 7). Several quartz stones were identified on a track by D. Palmer at 376767 m E, 6501336 m N, but the survey team all agreed that these are not Aboriginal stone artefacts (Map 2; Palmer 2021).

**Table 5: Features of potential cultural interest in the survey area**

Discussion point	Feature	Location (m E, m N)	Significance
1	Limestone pinnacles	Centre of survey area on both sides of railway corridor	Known values. Limestone pinnacles are known to be culturally significant in and near the survey area. Traditional Owners wish these features to be avoided.
2	Ancient soils (palaeosols)	Across survey area (depth tbd but likely ~0.5 to 1 m and deeper)	Potential values. Spearwood Sands (yellow sands) are old enough to cover earliest occupation of Australia. In Perth they are known to include artefacts dating 10,000-c.35,000 years BP.
3	Mature trees	South-eastern quarter of survey area	Known values. Remnant forest includes culturally significant trees (balga, jjerri, banksias). Mature forest is threatened and valued. Potential for preservation of modified trees.

### Cultural heritage values of the survey area

Previous archaeological research and written and oral histories in and near the survey area indicate that the survey area contains demonstrated or potential cultural heritage features such as limestone pinnacles, archaeological deposits, and modified trees, as follows (see also Table 4):

1. Limestone pinnacles in the survey area are significant for the Noongar consultants on the survey for historical and spiritual reasons. This result already suggests the place may qualify as a site under s5 of the Act– the previous survey report (O'Connor and O'Connor 2017a, 2017b) did not provide much detail supporting registration. The pinnacles are also more extensive than mapped by DPLH. Pinnacles were identified 100 m north and 200 m east of the boundary of Place ID 37478 (Photos 1, 2). Thick vegetation surrounding the pinnacles makes it impossible to accurately survey their full extent. Use of a drone, as suggested by Noongar consultants, would help identify pinnacles in areas that could not be inspected. The drone would fly transects over the pinnacles at low altitude and take a series of photographs which could then be geo-referenced enabling an accurate map of this heritage place. Several qualified archaeological drone operators are based in Perth and could perform this task easily.
2. Palaeosols are ancient soils, capped by recent deposits, in this case Quindalup dunes (e.g. Photos 3, 6). Other older deposits also noted in the survey include Spearwood dunes and dune limestone (Photo 2). For example, monitoring of site-works at Fiona Stanley Hospital, followed by archaeological test-excavation, revealed a 33,000 year old stone tool, which is now on display at

the hospital (Dortch and Dortch 2019). Archaeological survey on Rottne Island, which during Late Pleistocene times of low sea level was a small hill on the coastal plain, discovered artefacts in a palaeosol at c.7 m below surface of Quindalup dunes, immediately below a unit of Tamala limestone dated to c. 27,000 BP (Dortch and Dortch 2019). A site in Spearwood Dunes at Minim Cove, in the suburb of Mosman Park on the Swan River, is dated 10,000 BP (Clarke and Dortch 1977).

Where abundant archaeological remains are preserved in stratigraphic sequences, excavation could potentially identify evidence that would inform understanding of settlement patterns on the Swan Coastal Plain, and the history of technological and economic responses of Aboriginal groups to environmental changes. It appears doubtful that the survey area contains abundant archaeological remains, but small quantities, if identified, could help form a history of the survey area.

3. Noongar people historically exploited balgas, zamias and banksias for food and other resources (Meagher 1974). The woodland containing mature examples of these species in the south-east quarter of the survey area may be areas where people visited and possibly camped (Photos 7-8). A large jarrah (*Eucalyptus marginata*) is probably some centuries old and appears to be demarcated by survey pegs (Map 2). It was particularly noticed in the ethnographic consultations (Palmer 2021).

No trees inspected in the survey had scars or other modifications, but if any are found in the future, every effort should be made to preserve them, as due to natural ageing and the very small number of people still taking bark for tools, modified trees are a vanishing resource.

The survey area also has some potential to contain burials, although none were found in the present survey. Burials were often made near the occupation sites where the deceased person had died, and these sites were then reputedly avoided for a generation or so (Hassell 1978). The factors affecting burial distribution in the metropolitan area are not sufficiently well understood to assess the probability that burials exist in the survey area, but key factors are likely to include the past settlement pattern (likely to have been influenced by the distribution of productive soils and fresh water: Hallam 1987), the ease of excavating different soil types, and the preservation potential of different soil types.

A final comment on archaeological potential relates to the distance to known water sources and limestone as a natural feature with mythological significance. The distance from the survey area to the nearest mapped water source appears to be more than 800 m. Archaeological evidence and water sources appear to be rare in limestone ridge areas (Table 4). However, some water sources, such as soaks, may be too small to be deemed worthy of mapping. At least one soak was observed in the present survey, in the north-western quarter of the survey area (Photo 4, Map 2). A Noongar informant on a previous heritage survey in a nearby area noted that the water table is high around limestone, and that hollows in surface limestone may retain small quantities of water after rain (Schwede 1988).

This distribution suggests that the present survey area may have a subtle level of cultural significance that is less obvious than the records of concentrated economic activities and aggregations around waterbodies. The few small water sources may have been sufficient for small groups or individuals visiting mythological sites or engaged in other activities away from home bases, such as hunting. As such, the survey area might not contain many artefact scatters or burial sites, but it might contain scarred trees as markers, and mythological sites, which are usually not identifiable archaeologically. Further understanding of these factors requires advice from cultural custodians or other knowledge-holders.

#### **Management of potential archaeological remains**

Extensive ground cover reduces ground visibility, and it is possible that some surface archaeological material was not located in the present survey. Sub-surface material may also be present. Previous surveys show that concentrations of stone artefacts are found in some locations near natural water sources; and are generally sparse or absent elsewhere. Sand dunes may also be of archaeological interest. It is suggested above that past occupation in the survey area was probably short-lived or by small groups. If so, archaeological excavation within the survey area to identify sub-surface materials may be inconclusive, because the remains would be too sparse to locate in a practical test sample.

Instead, it would be desirable to monitor proposed land-clearing to identify any archaeological remains that may be inadvertently uncovered by the land-clearing. Monitoring also helps protect cultural materials not protected under the AHA, such as culturally significant tree species. Monitoring is often effective when carried out by Noongar custodians with knowledge of archaeological materials under an Aboriginal Heritage Management Plan. Such a plan also covers protocols for any discoveries of Aboriginal heritage material.

It would be necessary to consult carefully with senior Noongar custodians if any personnel involved in the proposed construction works identify Aboriginal heritage material. Heritage surveys in south-west Western Australia have developed successful protocols for culturally sensitive treatment of archaeological remains (e.g. Fisher *et al.* 2001). In particular, under the *Coroner's Act 1996 (Western Australia)*, discovery of human skeletal remains requires that the personnel involved notify the police. The police may wish to remove such remains immediately, but under the AHA, Aboriginal material is not to be disturbed without permission from Aboriginal community representatives and the Minister for Aboriginal Affairs. Suspected Aboriginal skeletal remains should therefore be professionally assessed, initially without removing them, in consultation with Aboriginal community representatives, the police, and DPLH.

Should material such as skeletal remains or archaeological deposits be identified, consultation could lead to a range of recommended actions, including total protection of the remains in place, selective systematic salvage of artefact scatters or deposits, or full archaeological recovery. Such work should maximise the protection of heritage material remains and recovery of information while keeping in mind the requirements of Noongar custodians and the proponent.



## **Recommendations**

While no archaeological sites are currently evident in the survey area, the survey area holds importance for Noongar custodians in the form of pinnacles and culturally significant plants. In addition, the soils of the survey area may conceal archaeological evidence of Aboriginal occupation.

On this basis, it is **recommended**:

1. The area of the pinnacles should be mapped using aerial photography shot on drone transects, as pedestrian access is impractical due to thick vegetation. With the additional ethnographic commentary recorded in the survey (Palmer 2021), more detailed and accurate heritage information could then be submitted to DPLH for reconsideration of the area of pinnacles as an Aboriginal heritage site.
2. Prior to any ground-disturbing work, DevelopmentWA should consider engaging suitably experienced Noongar people to monitor the works in case sub-surface heritage material is inadvertently unearthed. An archaeologist should also be engaged on a call-out basis should monitors require further assessment of any suspected heritage material.
3. Protection of mature trees is important for Noongar consultants and should be considered wherever possible.
4. An Aboriginal Cultural Heritage Management Plan or similar should be developed, before ground disturbance occurs, to allow for culturally appropriate management of any discoveries of suspected or actual heritage material.
5. The Aboriginal Cultural Heritage Management Plan should include a requirement that staff and contractors should be informed of the legal requirement to avoid disturbance to any Aboriginal site as defined in the *Aboriginal Heritage Act 1972* (Western Australia), whether registered or otherwise, and the view that disturbance of a site includes ground disturbance, souveniring or defacement.

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## **Appendix 1: Extract from the Aboriginal Heritage Act 1972 (WA)**

(Reprinted under the *Reprints Act* 1984 as at 1999)

### **5. Application to places**

This Act applies to —

(a) any place of importance and significance where persons of Aboriginal descent have, or appear to have, left any object, natural or artificial, used for, or made or adapted for use for, any purpose connected with the traditional cultural life of the Aboriginal people, past or present;

(b) any sacred, ritual or ceremonial site, which is of importance and special significance to persons of Aboriginal descent;

(c) any place which, in the opinion of the Committee, is or was associated with the Aboriginal people and which is of historical, anthropological, archaeological or ethnographical interest and should be preserved because of its importance and significance to the cultural heritage of the State;

(d) any place where objects to which this Act applies are traditionally stored, or to which, under the provisions of this Act, such objects have been taken or removed.

*[Section 5 inserted by No. 8 of 1980 s. 2; amended by No. 24 of 1995 s. 6.]*

### **15. Report of findings**

15. Any person who has knowledge of the existence of any thing in the nature of Aboriginal burial grounds, symbols or objects of sacred, ritual or ceremonial significance, cave or rock paintings or engravings, stone structures or arranged stones, carved trees, or of any other place or thing to which this Act applies or to which this Act might reasonably be suspected to apply shall report its existence to the Registrar, or to a police officer, unless he has reasonable cause to believe the existence of the thing or place in question to be already known to the Registrar.

*[Section 15 amended by No. 24 of 1995 s. 16.]*

### **16. Excavation of Aboriginal sites**

(1) Subject to section 18, the right to excavate or to remove any thing from an Aboriginal site is reserved to the Registrar.

(2) The Registrar, on the advice of the Committee, may authorise the entry upon and excavation of an Aboriginal site and the examination or removal of any thing on or under the site in such manner and subject to such conditions as the Committee may advise.

*[Section 16 amended by No. 8 of 1980 s. 5; No. 24 of 1995 s. 17.]*

### **17. Offences relating to Aboriginal sites**

A person who —

(a) excavates, destroys, damages, conceals or in any way alters any Aboriginal site; or

- (b) in any way alters, damages, removes, destroys, conceals, or who deals with in a manner not sanctioned by relevant custom, or assumes the possession, custody or control of, any object on or under an Aboriginal site, commits an offence unless he is acting with the authorisation of the Registrar under section 16 or the consent of the Minister under section 18.

*[Section 17 inserted by No. 8 of 1980 s. 6; amended by No. 24 of 1995 s. 18.]*

#### **18. Consent to certain uses**

- (1) For the purposes of this section, the expression “the owner of any land” includes a lessee from the Crown, and the holder of any mining tenement or mining privilege, or of any right or privilege under the Petroleum Act 1967, in relation to the land.

- (1a) A person is also included as an owner of land for the purposes

of this section if -

- (a) the person -

(i) is the holder of rights conferred under section 34 of the Dampier to Bunbury Pipeline Act 1997 in respect of the land or is the holder’s nominee approved under section 34(3) of that Act; or

(ii) has authority under section 7 of the Petroleum Pipelines Act 1969 to enter upon the land;

or

- (b) the person is the holder of a distribution licence under Part 2A of the Energy Coordination Act 1994 as a result of which the person has rights or powers in respect of the land.

- (2) Where the owner of any land gives to the Committee notice in writing that he requires to use the land for a purpose which, unless the Minister gives his consent under this section, would be likely to result in a breach of section 17 in respect of any Aboriginal site that might be on the land, the Committee shall, as soon as it is reasonably able, form an opinion as to whether there is any Aboriginal site on the land, evaluate the importance

and significance of any such site, and submit the notice to the Minister together with its recommendation in writing as to whether or not the Minister should consent to the use of the land for that purpose, and, where applicable, the extent to which and the conditions upon which his consent should be given.

- (3) Where the Committee submits a notice to the Minister under subsection (2) he shall consider its recommendation and having regard to the general interest of the community shall either -

- (a) consent to the use of the land the subject of the notice, or a specified part of the land, for the purpose required, subject to such conditions, if any, as he may specify; or



- (b) wholly decline to consent to the use of the land the subject of the notice for the purpose required, and shall forthwith inform the owner in writing of his decision.
- (4) Where the owner of any land has given to the Committee notice pursuant to subsection (2) and the Committee has not submitted it with its recommendation to the Minister in accordance with that subsection the Minister may require the Committee to do so within a specified time, or may require the Committee to take such other action as the Minister considers necessary in order to expedite the matter, and the Committee shall comply with any such requirement.
- (5) Where the owner of any land is aggrieved by a decision of the Minister made under subsection (3) he may, within the time and in the manner prescribed by rules of court, appeal from the decision of the Minister to the Supreme Court which may hear and determine the appeal.
- (6) In determining an appeal under subsection (5) the Judge hearing the appeal may confirm or vary the decision of the Minister against which the appeal is made or quash the decision and substitute his own decision which shall have effect as if it were the decision of the Minister, and may make such order as to the costs of the appeal as he sees fit.
- (7) Where the owner of any land gives notice to the Committee under subsection (2), the Committee may, if it is satisfied that it is practicable to do so, direct the removal of any object to which this Act applies from the land to a place of safe custody.
- (8) Where consent has been given under this section to a person to use any land for a particular purpose nothing done by or on behalf of that person pursuant to, and in accordance with any conditions attached to, the consent constitutes an offence against this Act.

*[Section 18 inserted by No. 8 of 1980 s. 6; amended by No. 24 of 1995 s. 19 2; No. 58 of 1999 s. 39.]*

## **Appendix 2: Former Department of Aboriginal Affairs Notes on Aboriginal Sites**

The former DAA prepared a version of these notes as a guide to the recognition of those sites in the 1980s. Although they are no longer available from DPLH, which now administers the *Aboriginal Heritage Act 1972* (Western Australia), the descriptions are still relevant.

An Aboriginal Site is defined in s5 of the *Aboriginal Heritage Act 1972* (Western Australia) as:

(a) Any place of importance and significance where persons of Aboriginal descent have, or appear to have, left any object, natural or artificial, used for, or made for or adapted for use for, any purpose connected with the traditional cultural life of the Aboriginal people, past or present;

(b) Any sacred, ritual or ceremonial site, which is of importance and special significance to persons of Aboriginal descent;

(c) Any place which, in the opinion of the Committee is or was associated with the Aboriginal people and which is of historical, anthropological, archaeological or ethnographical interest and should be preserved because of its importance and significance to the cultural heritage of the state;

(d) Any place where objects to which this Act applies are traditionally stored, or to which, under the provisions of this Act, such objects have been taken or removed.

### **Habitation Sites**

These are commonly found throughout Western Australia and usually contain evidence of tool - making, seed grinding and other food processing, cooking, painting, engraving or numerous other activities. The archaeological evidence for some of these activities is discussed in detail under the appropriate heading.

Habitation sites are usually found near an existing or former water source such as gnamma hole, rock pool, spring or soak. They are generally in the open, but they sometimes occur in shallow rock shelters or caves. It is particularly important that none of these sites be disturbed as the stratified deposits which may be found at such sites can yield valuable information about the inhabitants when excavated by archaeologists.

### **Seed Grinding**

Polished or smoothed areas are sometimes observed on/near horizontal rock surfaces. The smooth areas are usually 25 cm wide and 40 or 50 cm long. They are the result of seed grinding by the Aboriginal women and indicate aspects of a past economy.

### **Habitation Structures**

Aboriginal people sheltered in simple ephemeral structures, generally made of branches and sometimes grass. These sites are rarely preserved for more than one occupation period. Occasionally rocks are pushed aside or were used to stabilise other building materials. When these rock patterns are located they provide evidence of former habitation sites.

### **Middens**

When a localised source of shellfish and other foods have been exploited from a favoured camping place, the accumulated ashes, hearth stones, shells, bones and other refuse can form mounds at times several meters high and many meters in diameter. Occasionally these refuse mounds or middens contain stone, shell or bone tools. These are most common near the coast but examples on inland lakes and river banks are not unknown.

### **Stone Artefact Factory Sites**

Pieces of rock from which artefacts could be made were often carried to camp sites or other places for final production. Such sites are usually easily recognisable because the manufacturing process produces quantities of flakes and waste material which are clearly out of context when compared with the surrounding rocks. All rocks found on sandy coastal plain, for example, must have been transported by human agencies. These sites are widely distributed throughout the state.

### **Quarries**

When outcrops of rock suitable for the manufacture of stone tools were quarried by the Aborigines, evidence of the flaking and chipping of the source material can usually be seen in situ nearby. Ochre and other mineral pigments used in painting rock surfaces, artefacts and body decoration are mined from naturally occurring seams, bands and other deposits. This activity can sometimes be recognised by the presence of wooden digging sticks or the marks made by these implements.

### **Marked Trees**

Occasionally trees are located that have designs in the bark which have been incised by Aborigines. Toeholds, to assist the climber, were sometimes cut into the bark and sapwood of trees in the hollow limbs of which possums and other arboreal animals sheltered. Some tree trunks bear scars where sections of bark or wood have been removed to make dishes, shields, spearthrowers and other wooden artefacts. In some parts of the state wooden platforms were built in trees to accommodate a corpse during complex rituals following death.

### **Burials**

In the north of the state it was formerly the custom to place the bones of the dead on a ledge in a cave after certain rituals were completed. The bones were wrapped in sheets of bark and the skull placed beside this. In other parts of Western Australia the dead were buried, the burial position varying according to the customs of the particular area and time. Natural erosion or mechanical earthmoving equipment occasionally exposes these burial sites.

### **Stone Structures**

If one or more stones are found partially wedged into a position which is not likely to be the result of natural forces, then it is probable that the place is an Aboriginal site and that there are other important sites nearby. There are several different types of stone arrangements ranging from simple cairns or piles of stones to more elaborate designs. Low weirs were built to provide suitable environments in which to trap fish when tides fall are found in coastal areas. Some rivers contain similar structures that trap fish against the current. It seems likely that low stone slab structures in the south - west jarrah forests were built to provide suitable environments in which to trap some small animals. Low walls or pits were sometimes made to provide a hide or shelter for hunting.

Elongated rock fragments are occasionally erected as a sign or warning that a special area is being approached. Heaps or alignments of stones may be naturalistic or symbolic representations of animals, people or mythological figures.

### **Paintings**

These usually occur in rockshelters, caves or other sheltered situations which offer a certain degree of protection from the weather. The best known examples in Western Australia occur in the Kimberley region but paintings are also found throughout most of the state. Several coloured pigments may have been used at a site. Stencilling was a common painting technique used throughout the state. The negative image of an object was created by spraying pigment over the object which was held against a wall.

### **Engravings**

This term describes designs which have been carved, pecked or pounded into a rock surface. They form the predominant art form of the Pilbara region but are known to occur in the Kimberley in the north to Toodjay in the south. Most engravings occur in the open but some are situated in rock shelters.

### **Caches**

It was custom to hide ceremonial objects in niches and other secluded places. The removal of objects from these places, the taking of photographs of these places or objects or any other interference with these places is not permitted.

### **Ceremonial Grounds**

At some sites the ground has been modified in some way by the removal of surface pebbles, or the modelling of the soil, or the digging of pits and trenches. In other places there is no noticeable alteration of the ground surface and Aborigines familiar with the site must be consulted concerning its location.

### **Mythological Sites**

Most sites already described have a place in Aboriginal mythology. In addition there are many Aboriginal sites with no man - made features which enable them to be recognised. They are often natural features in the landscape linked to the Aboriginal account of the formation of the world during the creative 'Dreaming' period in the distant past. Many such sites are located at focal points in the creative journeys of mythological spirit beings of the Dreaming. Such sites can only be identified by the Aboriginal people who are familiar with the associated traditions.

### **Appendix 3: Aboriginal heritage surveys intersecting the survey area**

The surveys summarised in Table 2 are described below in more detail. Text in bold provides the DPLH Report ID, the report title, and the report author. Text in italics is provided by DPLH and describes the survey area for each report. Reports are listed in chronological order.

**102568      Report on a Survey for Aboriginal Sites on the Proposed Mitchell Freeway Extension, Shenton Avenue to Romeo Road. Feb.1989.      O'Connor, R**

*Large freeway corridor SE of present Survey Area. A survey of a 1km wide corridor centered upon the proposed Mitchell Freeway extension from Shenton Road, Joondalup to Romeo Road, Carrabooda, as shown in Fig. 1*

Ethnographic and archaeological survey was undertaken by O'Connor, Quartermaine and Bodney in February 1989. Several key families and historical sources were consulted. Archaeological survey consisted of driving the 200 m wide corridor for 10 km (Shenton Ave to Romeo Rd), stopping every 200 m to inspect a transect crossing the corridor. Only 'limestone features' were found – none were deemed to be important. About 25% of the area was found to be disturbed. No existing or new ethnographic or archaeological sites were found in the corridor.

**104279      Report on a survey for Aboriginal sites at the proposed Clarkson, Eglinton and Alkimos housing developments, north-west corridor. Jan.1990.      O'Connor, R**

*Entire area - coverage uncertain. Proposed Clarkson, Eglinton and Alkimos Housing Developments, North West Corridor. The three areas comprise approximately 247.5 ha, 607.3977 ha, and 865.847 ha respectively as shown in Fig. 1*

Archaeological and ethnographic survey for Landcorp was carried out by O'Connor, Quartermaine and Bodney in January 1990. Several key families and historical sources were consulted. Archaeological survey consisted of driving the tracks through the survey area, stopping every 200 m to inspect on foot "at right angles" to tracks. Only "limestone features" were found – none deemed to be important. About 25% of area was inspected. Another 25% of the area was thought to be disturbed through various housing, quarries, tracks, and pasture clearance. No existing or new ethnographic or archaeological sites were identified in the survey area. One isolated fragment (82 x 59 mm) of a grinding stone was found near a track, and not deemed to represent a site (although it is unusual).

**104091      Report on an Archaeological Survey on Proposed Mitchell Freeway Extension, Romeo Road to Perth-Lancelin Road. Jan.1997.      Harris, J.**

*Freeway corridor only. Proposed Mitchell Freeway Extension, Romeo Road to Perth - Lancelin Road. A corridor of 200m wide was surveyed as shown in Fig. 1*



Archaeological survey of freeway extension was carried out by J. Harris for Quartermaine Consultants on behalf of Main Roads WA in January 1997. The survey area was a 23 km x 200 m freeway corridor from Romeo Road to Perth-Lancelin Road, covered by transects at 50 m spacing where vegetation allowed, otherwise only on exposed ground. No drainage lines or dunes were encountered. The vegetation was all banksia woodland. No sites were found. No water sources were found either – Harris suggests areas closer to lakes would have more archaeological sites. She recommends advising project personnel of obligation to stop work if any heritage material is found through excavation.

**104175 Draft: Report on an Ethnographic Survey of the Proposed Mitchell Freeway Extension from Romeo Road to Perth-Lancelin Road. March 1997. O'Connor, R.**

*Freeway corridor only Proposed Mitchell Freeway Extension from Romeo Road to Perth-Lancelin Road. A survey corridor of 100m either side of the centreline of the proposed road reservation was surveyed as shown in Fig. 1*

An ethnographic survey by O'Connor in Jan-March 1997 consulted several key families – three families visited the project area, and the rest were consulted at their homes. No ethnographic sites were identified.

**23254 A report on an archaeological inspection : Lot 3 Romeo Road, Alkimos, WA. June 2008. Thomson, Jo**

*Large area bordering S boundary of present Survey Area. Lot 3 Romeo Road, Alkimos (the Project Area) is located on the Swan Coastal Plain, on the northern edge of the Perth metropolitan area, approximately 40 km north of the Perth CBD. The Project Area is located between Wanneroo Road and the coastline, with...*

This report describes archaeological survey by Jo Thomson/ TCHMP for Ethnoscience/LWP Property Group in June 2008. The background section noted that majority of sites within 5 km were mythological or culturally important natural features and there is a general lack of archaeological sites (3 out of 23 sites within a 5 km buffer).

The western portion of survey area is steep dunes covered by heath. The eastern portion is undulating sandy flats covered by low banksia woodland and grasses. There is thick Parrot bush (*Banksia sessilis*) in depressions.

Thomson found no sites or even isolated artefacts. She identified a low level of past Noongar activity in Quindalup sands. Her field survey was limited by dense vegetation reducing ground exposure and by access constraints, resulting in <7% of survey area inspected. She identified some potential for sub-surface material in Quindalup sands and recommended that a Cultural Heritage Management Plan be put in place to manage any sub-surface material and the survey results be communicated by the proponent to Traditional Owners.

**23256 Report of an ethnographic survey of Lot 3 Romeo Road, Alkimos, Western Australia.  
June 2008. Coldrick, Bryn**

*Large area bordering S boundary of present Survey Area Lot 3 Romeo Road, Alkimos (the Project Area) is located on the Swan Coastal Plain, on the northern edge of the Perth metropolitan area, approximately 40 km north of the Perth CBD. The Project Area is located between Wanneroo Road and the coastline, with...*

Ethnographic survey in June 2008 by Coldrick and McDonald (Ethnoscience) identified the dunes as part of “Waugal run” but they do not think it is a site. Nevertheless, surveys preceding this one identified steep dunes and limestone features as part of Waugal mythology, noting Daisy Bates comment that limestone features may be Waugal excreta. McDonald suggests Bates was referring to Noongar comments about specific places where the Waugal sat down or acted on something, not all limestone features. McDonald agrees that springs in the wider area are important. Previous surveys have also noted Noongar anguish on destruction of natural environment. The survey recommended preservation of steep dunes in the area. Christmas trees were identified in the survey area as culturally important, but not recommended for preservation. The authors note that up to the 1990s survey teams would generally identify specific places, but in the 2000s, a trend has emerged to identify limestone and dune landscape features in general as having ‘Waugal’ significance. McDonald and colleagues have previously argued this change is problematic – but perhaps the change reflects increasing Noongar confidence in arguing for protection of mythological sites or landscapes (for an example of the McDonald et al. position see McDonald, E., Coldrick, B. 2007 Confidential report of an ethnographic consultation regarding the Aboriginal heritage values of the Alkimos Eglinton Local Structure Plan Area, Alkimos, Western Australia. Unpublished report by Ethnoscience for Woodsome Management Pty Ltd).

**200830 Report on an Archaeological Survey of Butler to Yanchep Railway Alignment.  
February 2013. John Cecchi**

*Railway corridor only - Butler to Yanchep Railway Alignment*

An archaeological survey of railway extension for PTA by John Cecchi in February 2013 inspected 13 km of north-south railway alignment along north-south transects at 40 m intervals or where vegetation permitted. Corridor width and effective coverage (how much land actually inspected given constraints due to vegetation) are not specified. No archaeological sites or isolated artefacts were found.

**200673 Aboriginal Heritage Survey of Proposed Northern Suburbs Railway Extension  
Alignment. April 2017. Rory O’Connor and E. O’Connor**

*Railway corridor only*

Ethnographic survey was carried out for the Public Transport Authority (PTA) in April 2017 by R and E O'Connor and identified pinnacles as important. No other sites were identified. O'Connor suggested removing pinnacles if necessary, which seems to have been accepted by the group although avoidance would probably be preferable. The report critiques the significance of the pinnacles but this significance does seem very clear to at least two of the Noongar consultants (Ron Gidgup and Chris Shaw). This survey only assessed the railway corridor.

**200674 Addendum To Report On The Aboriginal Heritage Survey Of The Northern Suburbs Railway Extension. April 2017. Rory O'Connor**

*Railway ancillary areas*

This report extended the April 2017 survey by looking at ancillary facilities for the railway, like car parks. It is not clear what land was actually surveyed.

#### Appendix 4: Aboriginal heritage places within 5 km of the survey areas

This Appendix lists all the Aboriginal heritage places within 5 km of the Alkimos Central footprint, listed on the Register of Places and Objects, based on a register search performed on 2 February 2021. In Table 6, below, the Status column shows whether site information has been *Lodged* with DPLH or *Registered* or deemed *Not A Site / Stored Data* following ACMC recommendations. Site types are described in Appendix 2. The Restricted column shows places where Aboriginal custodians for the place have requested that access to the detailed records is restricted for cultural reasons. Coordinates (m E, m N) are for the centroids of DPLH polygons defining each place.

**Table 6: Aboriginal heritage places within 5 km of the survey area**

Place ID	Name	Status	Type	Restricted	m E	m N
1018	Doogarch.	Registered Site	Mythological, Rockshelter, Camp	No	377344	6504300
3366	Dunstan'S Quarry.	Lodged	Artefacts / Scatter, Camp	No	380350	6498291
3509	Karli Spring.	Registered Site	Mythological, Water Source	No	373739	6499949
3693	Lake Neerabup.	Lodged	Named Place	Yes	381922	6495470
4404	Orchestra Shell Cave.	Registered Site	Artefacts / Scatter, Engraving, Arch Deposit, BP Dating: 6500BP to 1730BP, Other: PA 19, NE	Yes	380906	6496886
17450	Nowergup Lake	Registered Site	Mythological	No	379733	6499450
17451	Pipidinny Lake	Registered Site	Mythological	No	375183	6505378
20596	Butler - FS01	Lodged	Ceremonial, Natural Feature, Water Source, Other: Sorry Place / Gnamma Hole	No	377957	6497650
20597	Butler - FS02	Lodged	Mythological	No	377492	6498484
20598	Butler - FS03	Stored Data / Not a Site	Historical, Modified Tree, Camp, Plant Resource, Water Source	No	377461	6499209
20600	Butler - FS04	Lodged	Other: Old Tuarts	No	377031	6499413
20765	SBJ01	Stored Data / Not a Site	Mythological, Natural Feature, Other: Limestone ridge	No	375840	6499642
20766	SBJ05	Stored Data / Not a Site	Natural Feature, Other: Limestone ridge	No	376202	6499320
20768	SBJ08	Stored Data / Not a Site	Mythological, Natural Feature, Other: Limestone Ridge	No	376039	6499691
20769	SBJ09	Stored Data / Not a Site	Natural Feature, Other: Tall Eucalyptus Trees	No	376693	6499728
20770	SBJ10	Stored Data / Not a Site	Natural Feature, Other: Old eucalyptus tree	No	376790	6499388
20771	SBJ07	Stored Data / Not a Site	Natural Feature, Other: Limestone Outcrop	No	376324	6499053
20772	Jindalee	Registered Site	Mythological, Natural Feature, Water Source	Yes	375174	6498529
24404	Swamp	Lodged	Mythological, Water Source	No	374344	6499148
24405	Christmas Tree	Lodged	Mythological, Natural Feature	No	375784	6498201
24406	Dunes	Stored Data / Not a Site	Mythological, Natural Feature	No	375001	6499683
24408	Dunes	Lodged	Mythological, Natural Feature	No	375050	6497881
24409	Dunes	Lodged	Mythological, Natural Feature	No	375942	6498169
37478	Romeo Road Pinnacles	Stored Data / Not a Site	Mythological	No	375994	6501115

## **Appendix 5: Features of interest in the survey area**

This Appendix lists co-ordinates obtained for features of interest to Noongar consultants within the Alkimos Central footprint, based on the survey on 27 and 29 January 2021 (Table 7, Map 2). Coordinates use MGA, GDA94. Only some pinnacles could be accessed, due to very thick vegetation, so aerial photography by drone is recommended to view and map all pinnacles.

**Table 7: Co-ordinates for features of interest to Noongar consultants in the survey area**

<b>Description</b>	<b>m E</b>	<b>m N</b>
Limestone pinnacle	375983.09	6501195.18
Limestone pinnacle	375990.29	6501204.13
Limestone pinnacle	375996.77	6501217.95
Limestone pinnacle	376019.13	6501188.85
Limestone pinnacle	376017.81	6501179.73
Limestone pinnacle	376016.32	6501169.75
Limestone pinnacle	375714.66	6501135.53
Limestone pinnacle	375727.46	6501168.06
Limestone pinnacles	376252.76	6501135.35
Limestone pinnacles	376245.60	6501181.17
Limestone outcrop	376923.36	6501137.98
Limestone outcrops (general area)	376926.00	6501211.64
Zamias	375965.33	6501323.46
Zamias	375775.82	6501296.79
Large jarrah	376898.05	6501120.38
Dry soak	375675.62	6501902.11