

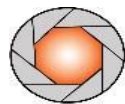


OPEN REPORT

**ASSESSMENT OF ABORIGINAL HERITAGE VALUES
AND TRADITIONAL USES**

Atlas Project - Image Resources NL

September 2020



Recognition of People & Country

Horizon Heritage Management acknowledges and pays respect to the Yued 'Noongar' Traditional Owners and community of the land and sea of this 'boodja' (country). We pay respect to the Elders past, present and emerging who hold the memories, traditions, culture and hopes for the future.

Horizon Heritage has chosen to use the spelling Noongar (other options; Nyoongar, Nyungah & Nyoongar) for this report. Yued refers to the Noongar dialectal group north of Perth.

Confidentiality

This is an open report and no information in this report is confidential or restricted.

Disclaimer

This assessment report is being supplied to Image Resources so it can understand the likely Aboriginal heritage values and traditional uses at its proposed Atlas Project. Image Resources has to manage its requirements and responsibilities under the WA *Aboriginal Heritage Act (1972)* (AHA) and be aware of and minimise risks to Aboriginal heritage and culture. Aboriginal sites, places and objects are afforded protection under the AHA.

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Acknowledgements

Horizon Heritage Management acknowledges the assistance of Preston Consulting for this assessment report.

Abbreviations

ACMC	Aboriginal Cultural Material Committee
AHA	<i>Aboriginal Heritage Act (1972)</i>
DMIRS	Department of Mines, Industry Regulation and Safety
DPLH	Department of Planning, Lands and Heritage
GIS	Geographic Information System
GPS	Global Positioning System
ILUA	Indigenous Land Use Agreements
MGA	Map Grid of Australia
NSHA	Noongar Standard Heritage Agreement
NTC	Native Title Claimant Group
SWALSC	South West Aboriginal Sea and Land Council
WGS	World Geodetic System

Horizon Heritage Management

Damien Lafrentz

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1 PROJECT BRIEF

Horizon Heritage Management was engaged by Image Resources NL (Image Resources) to undertake an assessment of Aboriginal heritage values and traditional uses in order to understand the extent and characteristics of any known and likely Aboriginal heritage values within their Atlas Project area.

Image Resources are planning for the potential development of the Atlas Project, a mineral sands mine located approximately 18 km east of Cervantes, Shire of Dandaragan, in Western Australia.

Image Resources intends to refer the Project for assessment under the *Environmental Protection Act 1986* and as such needs to understand the potential Aboriginal heritage values of the site. These values will be considered in project design to ensure impacts are minimised and assessed through the EPA assessment process.

An assessment of Aboriginal heritage values is therefore required for the project in order to better understand the known and potential Aboriginal heritage values of the land and resulting Aboriginal heritage requirements. The assessment should:

- Identify whether any registered Aboriginal heritage sites occur within the Project or in close proximity;
- Provide a contextual assessment of the general Aboriginal heritage values of the area;
- Identify any features at the Project that may:
 - Be ethnographic sites;
 - Have a higher likelihood of the presence of archaeological sites;
 - Be of high value for bush tucker or bush medicine; and
- Provide recommendations as appropriate to minimise impacts to Aboriginal heritage values.

2 PROJECT BACKGROUND

¹The Atlas tenement (MLA 70/1305) covers 947 ha and overlays a combination of Unallocated Crown Land and freehold farmland. Mining at the project will utilise dry open cut mining techniques to extract approximately 9.5 Mt of ore over an initial three to four year period. A Wet Concentrator Plant will be constructed and operated on site to recover the contained heavy minerals via gravity separation. The northern quarter of the ore body is located on freehold land currently used for stock grazing. The rest of the ore body is located on land covered with native vegetation.

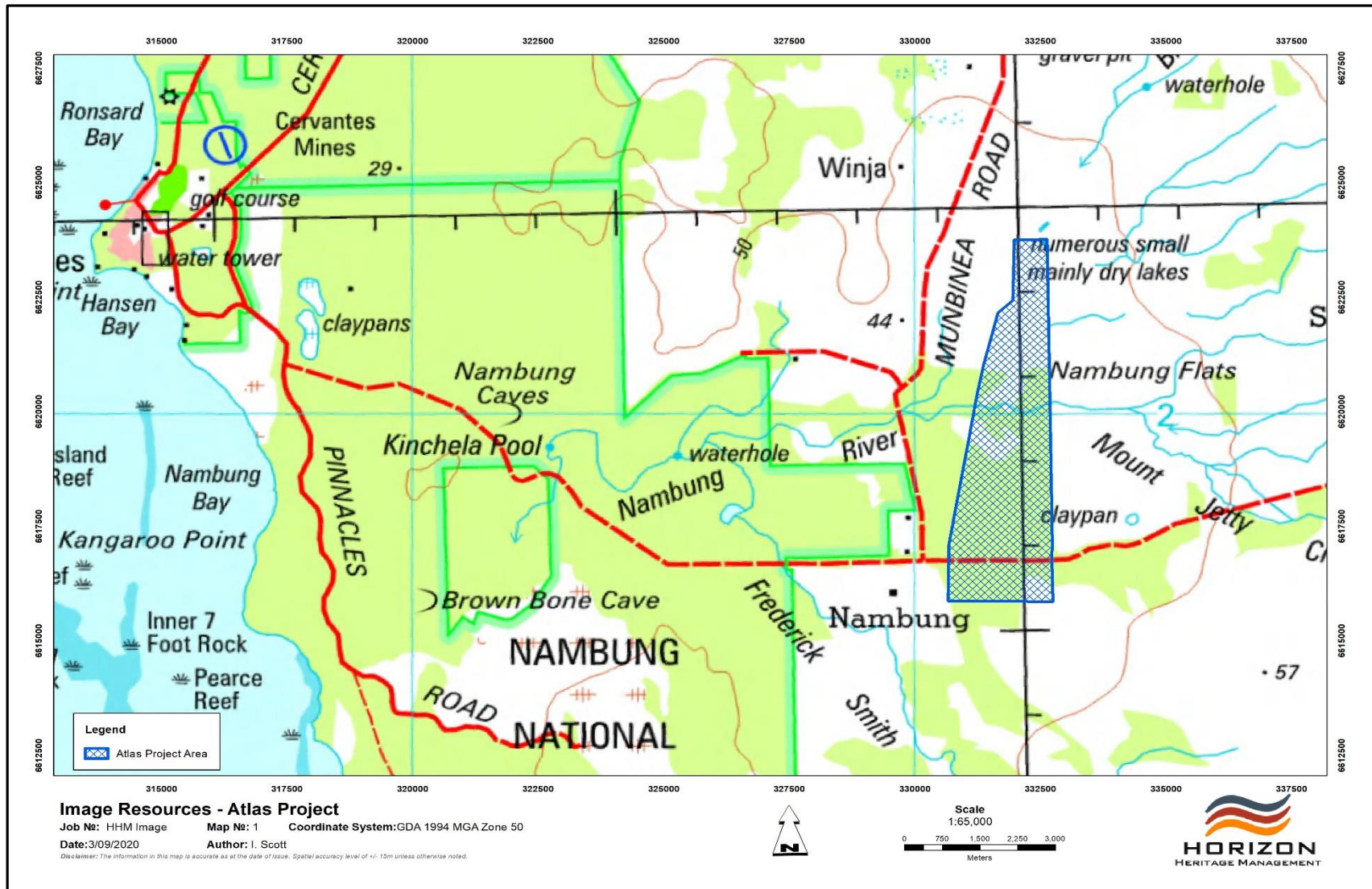
A regional location map is shown as Map 1.

The Project includes the following characteristics:

- The proposed mine pit is approximately 6 km long, 200 – 400 m wide and 1 – 10 m deep;
- Proposed excavations would use dry mining techniques in successive blocks;
- Backfill of the mined voids with overburden and tailings (sand and clay fines fractions) would progressively occur as the mining advances from one block to another;
- There is expected to be a high-water table in the vicinity of the ore body (2 – 5 m depth).

¹ Atlas Heritage Survey Scope of Works, 20/07/2020.

Map 1: Atlas Project Assessment Area Locality Map



3 ABORIGINAL HERITAGE ACT

Aboriginal Heritage Legislation Requirements

The Western Australian *Aboriginal Heritage Act* (1972) (AHA) was enacted to ensure that Aboriginal heritage to which the AHA applies could be appropriately protected and preserved.

All Aboriginal sites of archaeological and ethnographic significance in Western Australia 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 Section 5 definitions of the AHA.

A land user is obliged to comply with the provisions of the AHA and failure to do so may result in prosecution. Section 17 of the AHA provides that it is an offence to excavate, destroy, damage, conceal or in any way alter an Aboriginal site. Therefore, land users should carefully evaluate how a proposed activity may affect Aboriginal heritage.

Section 5

An Aboriginal Site means any place to which the *Aboriginal Heritage Act* (1972) applies by operation of Section 5 of the Act:

(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 17

Section 17 of the *Aboriginal Heritage Act* (1972) outlines 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;

(c) 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.

4 YUED 'NOONGAR' PEOPLE

4.1 Identification of key Aboriginal Stakeholder Group

The existence of a native title claim (NTC) is seen as sufficient to establish an Aboriginal person's 'right to speak' about heritage issues.

The Yued have had a registered Native Title Claim since 1997 which covers the: City Of Wanneroo, Shire Of Chittering, Shire Of Coorow, Shire Of Dalwallinu, Shire Of Dandaragan, Shire Of Gingin, Shire Of Goomalling, Shire Of Moora, Shire Of Toodyay, Shire Of Victoria Plains and the Shire Of Wongan-Ballidu.

Identified Stakeholder Group

The table below outlines the Yued (Noongar people):

Table 1: Aboriginal group identified as a key stakeholder in the assessment area

NTC GROUP	NTC	CONTACT
Yued	WC 1997/071 WAD 6192/1998	South West Aboriginal Sea and Land Council (SWALSC)

Yued

Yued refers to the Noongar language or dialectal group north of Perth. On 8 June 2015, six identical Indigenous Land Use Agreements (ILUAs) were executed across the South West by the Western Australian Government and, respectively, the Yued, Whadjuk People, Gnaala Karla Booja, Ballardong People, South West Boojarah #2 and Wagyl Kaip & Southern Noongar groups, and the South West Aboriginal Land and Sea Council.

The ILUAs bind the parties (including 'the State', which encompasses all State Government Departments and certain State Government agencies) to enter into a Noongar Standard Heritage Agreement (NSHA) when conducting Aboriginal Heritage Surveys in the ILUA areas, unless they have an existing heritage agreement. It is also intended that other State agencies and instrumentalities enter into the NSHA when conducting Aboriginal Heritage Surveys in the ILUA areas. It is recommended a NSHA is entered into, and an 'Activity Notice' issued under the NSHA, if there is a risk that an activity will 'impact' (i.e. by excavating, damaging, destroying or altering in any way) an Aboriginal heritage site. The Aboriginal Heritage Due Diligence Guidelines, which are referenced by the NSHA, provide guidance on how to assess the potential risk to Aboriginal heritage.

Likewise, from 8 June 2015 the Department of Mines, Industry Regulation and Safety (DMIRS) in granting Mineral, Petroleum and related Access Authority tenures within the South West Settlement ILUA areas, will place a condition on these tenures requiring a heritage agreement or a NSHA before any rights can be exercised.

5 ETHNOGRAPHIC BACKGROUND

Ethno-history

The Swan Coastal Plain has been divided into several 'physiographic elements' starting from the Darling Fault Scarp: a Piedmont Zone of alluvial sediments, a gently undulating Sandy Plain with swampy areas in low-lying land between the dunes, characterised by a string of lakes running north and south, and Coastal Limestone, the Shore Line, shallow waters, and islands and reefs (Jutson, 1950: 89-90). A classification paralleling that of Jutson a decade later appears to be preferred among archaeologists. It is cited by Sylvia Hallam from a CSIRO publication for 1960 using local names of suburbs: Ridge Hill Shelf: the foothills of the Darling Scarp, Pinjarra Plain: the piedmont alluvial plain, Bassendean Dunes: the coastal sand plain, Spearwood Dunes: aeolian limestone, and Quindalup Dunes: the coastal dunes (McArthur and Bettenay, 1960; cited in Hallam 1975: 51). All of these ecological niches are important to the Indigenous people. This profile focuses on the last-named, the coastal dunes, and the geomorphic elements of the Swan Coastal Plain close to the dunes, the sea to the west and the lakes to the east.

The Yuat are a language group belonging to the Noongar language family of the South West of Western Australia. Their traditional territory lies immediately north of Perth, described by Tindale as: 'At Gingin, Moora, New Norcia, Moore River, and Cape Leschenault; north to about Hill River; inland to near Miling and Victoria Plains' (Tindale, 1974: 242-243).

According to Tindale, the traditional territory of the 'Whadjuk' of the Perth Metropolitan area includes (see Attachment I):

Swan River and northern and eastern tributaries inland to beyond mount Helena; at Kalamunda, Armadale, Victoria Plains, south of Toodyay, and western vicinity of York; at Perth; south along coast to near Pinjarra (Tindale, 1974: 242-243).

The Archaeological evidence for extensive Indigenous occupation from antiquity in the Perth area is strong. In particular Mulvaney and Kamminga note:

detailed observations of Aboriginal life, documenting the enormous variety of plant and animal foods that the local Nyoongar people obtained from many environments ... One of the most important Holocene sites in southwestern Australia is Walyunga, 40 kilometres north of the Swan River near Perth ... In the early phase, from 8000 to 4500 years BP ... in the later phase, which continues after 3200 years BP' (Mulvaney and Kamminga, 1999: 293-294).

There is further evidence of greater antiquity in the Perth region. In particular:

The Upper Swan River site near Perth has the distinction of having its age of about 38 000 years old accepted by almost all leading archaeologists ... It is an extensive, open-air camp site on an ancient floodplain bordering the upper Swan River between Perth and Walyunga' (Flood, 1995: 106).

While entertaining doubts about those dates of 32,000 to 38,000 years BP – on questions of radiocarbon dating and insufficient details about the artefacts – Mulvaney and Kamminga are

satisfied with other dates for the Perth area: 29,000 years BP for Helena Valley and 10,000 years BP for Minim Cove on the Swan River (Mulvaney and Kamminga, 1999: 137-138, 178).

In the immediate Yanchep area, Hallam found that the 'Orchestra Shell' cave in the Aeolian limestone belt midway between Perth and Yanchep: 'has on its roof slope straight grooves, a single splayed and many meandering snake-like markings ... and evidence of fire from about 4,500 B.C. to 200 A.D. (Hallam 1975: 83; citing earlier work, 1971).

Yanchep and nearby areas are within a coastal strip of continued significance to Noongar people. Traditionally, they lay on a route connecting the population centres of the coastal plain:

A strip of the twenty-mile wide coastal plain stretching north halfway towards the next centre of population in the Moore River-Gingin district, and south halfway towards the concentration around the Serpentine-Murray-Harvey estuaries ... Eastward it would stop short of the separate groups in the York-Toodyay area. One wonders, however, whether the aggregation Stirling described did not include the Murray men, the Gingin folk, or even the York people, for these are certainly mentioned from time to time as visiting Perth, or having kin there (Hallam, 1975: 108).

Yanchep certainly lay on the north-south communication route connecting Aboriginal groups with others down the coast and inland, including along the Swan River (Derbal Yaragan). The Swan River has special significance to Noongar people who called it the Derbal Yaragan (*derbal* = an estuary; *yaragan* = river; Bindon & Chadwick, 1992: 43, 187).

The Warndoolier, nearer to Perth became the Swan and combined downstream with the Dyarlgarro or Canning River; all then flowing as one to the coast to empty into the Derbal Naral, the expanse of sheltered water that includes the whole of Cockburn Sound from Mangles Bay to the northernmost tip of Rottnest Island (Green, 1984: 2)

This is important because the Aboriginal people of the Swan River plain had (and have) close ties with the neighbouring Yued people.

Walyunga National Park appears to lie on the boundaries of three Noongar language groups: the Whadjuk of the Perth plains, the Balardong and the Juat (Tindale's spelling).

The Noongar language family is classified as belonging to the 'Nyunga Subgroup' and to the Pama-Nyungan Family of Aboriginal languages (Oates and Oates, 1970: xiii). According to that authority, 'Nyunga' contains within it twelve languages: Juat, Wadjuk, Balardong, Pinjarup, Wiilman, Kaneang, Wardandi, Pibelman, Minang, Koreng, Nyakinyaki, and Wudjari (ibid., pp. 60-62). More recently, Thieberger (1996) finds eleven languages of the South West: Yuwat, Balardung, Wajuk, Binjarub, Wiilman, Kaniyang, Wardandi, Bibbulman, Minang, Goreng, and Wudjaarri that are today subsumed under the name 'Nyungar.' Drawing upon twenty-five documented sources, Bindon and Chadwick (1992) include variations between these languages, but they are often differences of pronunciation as recorded by European listeners of the time. Noongar people hear the differences too.

Contact & Settlement

The area of the Western Australian wheat belt between Perth and Geraldton was entered by A.C. Gregory who saw deposits of coal on the Irwin River, a watercourse that reaches the coast between Port Denison and Dongara south of Geraldton. He also found deposits of lead ore in 1848 on the banks of the Murchison (Bignell, 1987: 462). Settlers moved to the Geraldton area following Gregory's favourable reports on the country: 'a scattering of settlement grew, unofficially, north of Toodyay, in the Champion Bay area ...' (Bignall, 1987: 462).

The town of Moora was settled around 1846. In that year the Benedictine mission of New Norcia was founded some eight kilometres from the present-day site, to which it was relocated in 1847. The monks of New Norcia began keeping records in the 1850s. By 1869, following the arrival of additional missionaries, the monastery became the equivalent of a diocese. In 1905 land north of Moora was sold to settlers and to the New Norcia monks after the Midland Railway Company opened a line from Perth in 1894, resuming a lot of pastoral land. Moora was gazetted as a town in 1908. Farming at the New Norcia mission continued with Aboriginal labour until 1913 (Aplin, 1987:466-467). The mission was also a centre for the education of Aboriginal children. It does not have an unblemished record:

There was increasing tension between the families and the institution when the Mission began to restrict and then deny the parents access to their children. Matters reached a crisis in 1907 when thirty-five Aborigines led by Emmanuel Jackamarra, George Shaw and Lucas Moody stormed the Mission orphanage to free their children. Their efforts were unsuccessful and the trio were arrested, charged and convicted. Each received two months gaol for disorderly conduct and an additional month for damaging Mission property (Green and Tilbrook, 1989: xix).

The schools of New Norcia, St. Joseph's and St. Mary's, continued to function as institutions for children until changes in Western Australian government policy in the 1960s.

Moore River has its name from George Moore who in the 1830s explored the district. In 1918 an Aboriginal reserve named Mogumber Mission was established. Conditions in this institution were arguably worse than those at New Norcia. From 1921 children from Perth deemed to be a social nuisance were sent there, and between 1918 and 1950 the place became also a holding centre for Aboriginal children and adults from northern regions of the state. Conditions were poor, both in diet and in ill treatment (Aplin, 1987: 466). In the present-day Moore River has been taken back by the local Noongar (Yued) community, the old mission leased and restored early in the 1990s by the Wheatbelt Aboriginal Corporation (Bourne, T. 1994: 715).

Daisy Bates notes traditional relationships between Yued people and neighbouring Indigenous people from Perth, and from other parts of the South West. In one instance, Bates describes how the flowers of the banksia tree were picked by the men and allowed to ferment, and that for the subsequent feast in South Perth Aboriginal people from Pinjarra, Guildford, York, and Gingin were invited to participate (Bates, 1985: 241). In a second instance, an important *rite de passage* to manhood/womanhood, the ceremony within the living memory of Bates's informants (nineteenth century), was held last in the Swan district.

On that occasion messengers were sent to many districts carrying message sticks, 'to Moore River, York, Northam, Toojee ... Mandura[h], Bunbury' (Bates, 1985: 327).

Present-day Indigenous oral history regards Gingin, which once had an Aboriginal community of seventy-nine (79) men and women, recorded for 1858 (Green and Tilbrook, 1989: 193), as an area with too many spirits of the dead where Noongar people no longer dwell. It is perhaps a memory of the influenza epidemic of 1918 that took many Indigenous lives, and earlier epidemics in the region.

The official Native Interpreter, Francis Armstrong, made population estimates for some of the local Indigenous groups of the Perth coastal plain for the early 1830s:

The total number, including women and children, who are in the habit of visiting Perth, Fremantle, Guildford and Kelmscott, are estimated at nearly 700; of whom the Interpreter can recognise, at sight, 400 at least. He averages a tribe to every ten miles square of country (Armstrong, 1836).

The 'weakening' of these local groups noted by Armstrong appears to have come about from a combination of disease and violence, the latter sometimes described in the oral tradition as 'massacres.' In 1832 whooping cough was prevalent, followed in 1833 by cholera (Green, 1979: 95).

Tindale writes that R. M. Lyon (1833) 'when dealing with the people in the immediate vicinity of Perth ... recognized groups on a hordal basis ... As he considered groups further away where he had less information, he recognized the larger units that are called tribes' (Tindale, 1974: 142). The 'horde' in anthropological usage usually denotes a local group, that is, 'the small group that owned and occupied a certain defined territory.' It was exogamous, that is, marrying out, and a number of hordes together may be called a tribe (Tindale, 1974: 16-17). Armstrong's and Lyon's use of the word tribe in this context appears to refer to the local group. Armstrong's observations were made within eight years after the establishment of the Swan River Colony, so we can be confident that he was reporting on pre-contact Aboriginal culture. Arguably the Noongar families that figure in the present-day in Heritage surveys, as Native Title applicant groups, and local associations or in cultural centres represent equivalents of the local group.

Robert Menli Lyon arrived at the Swan River Colony in 1829 and took up land on the Swan River for a short time before leaving the colony in 1834. His description of Aboriginal 'tribal districts' in the region from 1832-1833 is among the first to be documented for the Perth coastal plain (Green, 1979: 141-142). Some of the local groups are acknowledged in present-day nomenclature, for example, 'Beelias' for a major road running east from the Mitchell Freeway, Murray for the Murray River further south (see Attachments II: reproductions of Lyon's map).

Continuities of the Sacred

The Swan River, the Canning River and their tributaries, as well as the Murray River further south, the Moore River to the north and the strings of coastal lakes interconnected through the water table, are regarded as sacred to the Rainbow Serpent, the *Wagyl*, by present-day Noongars. Belief in the Rainbow Snake as a major creative Dreamtime being is widespread in Aboriginal Australia.

In Yued oral history, the lakes system in the coastal plain that is connected by the meandering Moore River is sacred to the Rainbow Serpent. The waterways in Yued country are arguably part of a more extensive Dreaming Track. Belief in the Rainbow Snake as a major creative Dreamtime being is widespread in Aboriginal Australia. Sylvia Hallam points to the rich complex of associations between the *Wagyl* (which is the name of the Rainbow Serpent in the Noongar South West) and the chief physical elements of nature - fire, water, the sky, the earth - saying that, 'the connection of the serpent with water and also with dark caverns, are themes seen as recurring within and without the South-west of Australia' (Hallam, 1975:82). Descriptions of the Rainbow Serpent have a common core of beliefs about its qualities. It dwells deep within watercourses, waterholes, rivers and rock pools, and maintains the quantity and the quality of the drinking water. If a site closely associated with the Rainbow Snake is desecrated in any manner - and that includes virtually all places where there is water in significant quantities or, in arid areas, water courses albeit dry for most of the year - the persons responsible are in literal physical danger and the land itself is depleted, for the Rainbow Snake will go away.

Conclusion

Today there are substantial Noongar (Yued) communities in Moora and at the old Moore River settlement. There are also Yued people at such centres as Dandaragan and Walebing. Descendants of the Yued mentioned in historical records with family names such as Jackamarra, Moody and Shaw, Warrell and Mippy live in the area today. Yued elders told this writer that the Moore River and the connected system of lakes to this day have deep spiritual significance.

Communication routes, Dreaming tracks and Dreaming stories remain in the oral tradition of many Noongar families; so too do stories remain and the localities with which they are associated as campsites or as burials. The coastal fringe and the dunal system were widely used in pre-contact times and in the immediate years following contact.

Contemporary Context

Spiritual connections are just as important now as they were in the past, Yued people today maintain a watching brief over their traditional lands. They continue to hunt and gather bush food, continue to pass on knowledge to the younger generations, and continue to revisit certain locales for spiritual refreshment and to look after the land.

There are continuing associations between Yued families and the areas where they have lived for generations, as well as their homelands. They still consider waterways as highly significant and continue to pass on cultural knowledge to the younger generations to maintain cultural practices, such as hunting for turtles and jilgies.

Nambung

Nambung is a suburb within the Shire of Dandaragan in Western Australia. The Aboriginal name for the area 'Nambung' means winding or crooked and refers to the river running through the Nambung National Park (Nambung National Park 2020).

6 ARCHAEOLOGICAL BACKGROUND

The colonisation of the Swan Coastal Plain has resulted in substantial disturbance to original environmental contexts. This directly affects the likelihood of locating further intact surface archaeological material. Despite this, an indication of potential Aboriginal heritage within the vicinity of the assessment area may be derived from examining the original environmental context and ascertaining what sites have previously been reported from such land units, as well as what has been reported by previous research conducted in the surrounding area.

The primary source of archaeological information for Perth, the surrounding areas and the Swan Coastal Plain comes from the Perth Archaeological Survey undertaken by Hallam in the 1970s which covered a section of Perth from the coast to the Darling Scarp (Hallam 1986). Over 380 sites were located and the survey remains the most extensive research yet undertaken for the area.

The survey attempted to explain the variations in occupation patterns of pre-contact Aboriginal groups. Four phases of usage were suggested for the plain:

- **Early:** low numbers of sites with artefacts including steep scrapers and the use of Eocene fossiliferous chert. This period extended from the Pleistocene to 5,000 years BP.
- **Middle:** from 5,000 BP to 500 years ago. Sites usually found close to permanent water. Artefacts are made of quartz and chert and include backed blades, adzes, scrapers and flakes.
- **Late:** from 500 years ago. Sites cluster on the coastal plain. Bipolar cores and artefacts manufactured on quartz dominate assemblages.
- **Historic:** from 1829 onwards. Assemblages include artefacts made on post-contact material such as glass, pottery and ceramics.

The study suggested some initial patterning of site locations in the metropolitan area. Few sites were found on the coastal dunes or in the limestones west of the Spearwood Dunes. The majority of sites were found on elevated dunes or sandy ridges near the margins of creeks, swamps and wetlands associated with the Bassendean Sands. The wealth of natural resources associated with these environments was the focus of seasonal attention. Most sites were surface scatters of artefacts (commonly made of quartz), usually found in open sands near water sources.

Strawbridge (1988:34) developed a model of occupation for the Swan Coastal Plain on the basis of this research, which indicated that:

- Archaeological sites are likely to be situated on sandy well-drained dune ridges (the Bassendean Sands or thin Bassendean Sands over Guildford Formation);
- Archaeological sites are likely to be found within 350 m of a potential water source;
- Archaeological sites are unlikely to be located in low-lying, poorly drained or seasonally inundated areas; and

- Archaeological sites are unlikely to be located more than 350 m away from a potential water source.

The lakes and wetlands of the Swan Coastal Plain clearly provided an abundant supply of food and resources for the Noongar people. The records of the early settlers (Hammond 1933; Grey 1841) indicate that the chain of lakes which extended from Geraldton to Mandurah formed a major highway of movement for people along which a rich social and ceremonial life was enacted at the appropriate time of year.

Although few sites in the metropolitan area have been dated, most of them are located in the Swan Valley and Darling Scarp area (Walyunga, Helena Valley, and Brigadoon). Dates of between 32,000 and 38,000 years BP have been claimed for terraces on the Upper Swan River (Pearce and Barbetti 1981). A date of 9,930 years BP was obtained from Minim Cove on the Swan River (Clarke and Dortch 1977). More recent mid to late Holocene dates with a range of 6,000-1,000 years BP, have also been derived from the Bassendean Sands (Pearce 1977).

7 ABORIGINAL HERITAGE INQUIRY SYSTEM RESEARCH

A search of the Department of Planning, Lands and Heritage (DPLH) online register of Aboriginal sites; the Aboriginal Heritage Inquiry System (AHIS) was conducted on the 31st of August, 2020. This search was used to provide contextual Aboriginal heritage information for inclusion and evaluation within the Atlas Project assessment area.

The research determined both the registered ethnographic and archaeological sites and other heritage places within the project area and the nature and frequency of Aboriginal heritage surveys undertaken. In turn, the potential impact of the Atlas Project assessment area upon these sites and places and the likelihood of identifying additional sites and heritage issues were assessed in preparation of this research.

The locations of sites and places on the DPLH register is frequently unreliable. Many sites and places were originally located prior to the availability of Global Positioning Systems (GPS). Conversion from imperial to metric mapping coordinates and the recording of coordinates via map grid to the nearest kilometre has introduced further possibilities for error. Also human error with inputting or converting data accurately is another risk.

7.1 DPLH Aboriginal Heritage Inquiry System

Terminology

Place ID / Site ID: This a unique ID assigned by the DPLH to the place or site.

Status:

Registered Site: The place has been assessed as meeting Section 5 of the *Aboriginal Heritage Act* (1972).

Other Heritage Place which includes:

- **Stored Data / Not a Site:** The place has been assessed as not meeting Section 5 of the *Aboriginal Heritage Act* (1972).

- **Lodged:** Information has been received in relation to the place, but an assessment has not been completed at this stage to determine if it meets Section 5 of the *Aboriginal Heritage Act* (1972).

Open: No Restrictions - Availability of information (other than boundary) that the DPLH holds in relation to the place is not restricted in any way.

Closed: Restrictions - Some or all of the information that the DPLH holds in relation to the place is restricted if it is considered culturally sensitive. This information will only be made available if the DPLH receives written approval from the informants who provided the information.

7.2 DPLH Aboriginal Heritage Inquiry System Results

There are no registered Aboriginal sites and Other Heritage Places identified on the DPLH AHIS (see Section 16) as being located within the Atlas Project assessment area. Five registered sites and nine Other Heritage Places detailed below have been chosen for inclusion in this assessment to demonstrate that important Aboriginal cultural sites, features and materials have been recorded within Yued country surrounding the Atlas Project assessment area.

7.3 DPLH Registered Aboriginal Sites

The five registered sites detailed below have been chosen for inclusion in this assessment to demonstrate that important Aboriginal cultural sites, features and materials have been recorded within Yued country surrounding the Atlas Project assessment area. A brief review of these will highlight the types of Aboriginal archaeological and ethnographic sites already known to exist in the vicinity of the survey area as well as their geomorphological context.

The following five registered Aboriginal sites are located within reasonable proximity (25kms) to the Atlas Project assessment area:

Table 2: DPLH Registered Aboriginal sites within proximity to the assessment area

DPLH SITE ID	SITE NAME	SITE TYPE	STATUS	LOCATION
4639	Cooljarloo Well	Mythological, Water Source	Registered OPEN	346039mE 6607350mN Reliable
4640	Mullering Brook	Mythological	Registered OPEN	356073mE 6614968mN Reliable
4641	Wongonderrah Camp	Artefacts / Scatter, Camp, Water Source	Registered OPEN	351639mE 6611350mN Reliable
4642	Muralang Pool Camp	Mythological, Man-Made Structure, Artefacts / Scatter, Camp and Water Source	Registered OPEN	354339mE 6608450mN Reliable
4644	Mullering	Artefacts / Scatter, Arch Deposit	Registered OPEN	352873mE 6606508mN Reliable

DPLH 4639 Cooljarloo Well

DPLH 4639 Cooljarloo Well is a registered Aboriginal site and is protected under the AHA. The DPLH register lists the site type as mythological and a water source. The site file and site boundary have no access restrictions.

Cooljarloo Well was recorded by O'Connor in 1987 while undertaking a heritage survey with Noongar People (informants from the Bodney and Colbung families) for the Cooljarloo Minerals Sands Project. The site has both a mythological *Waugal* association and a traditional water source significance. The water source was formed by the creative activities of the *Waugal* whose spiritual essence still exists there. The well was noted as a reliable water source in a very dry patch of country. Various Noongar families starting with the Isaacs and more recently the Bodney, Colbung, Mippy and Worrell families (through kin) acted as custodians of this site over time. The significance of water to Noongar People has been well documented in heritage surveys in Noongar country and broader south-west WA region, with

numerous rivers (and often their tributaries), creeks, brooks, wetlands and swamps having been recorded as sites. Cooljarloo Well is a significant mythological and water source area to the Noongar People. The Cooljarloo Well registered site is located approximately 16kms south east, outside of the Atlas Project assessment area.

DPLH 4640 Mullering Brook

DPLH 4640 Mullering Brook is a registered Aboriginal site and is protected under the AHA. The DPLH register lists the site type as mythological. The site file and site boundary have no access restrictions. Mullering Brook was recorded by O'Connor in 1987 while undertaking a heritage survey with Noongar People (informants where from the Mippy, Rider, Bodney and Colbung families) for the Cooljarloo Minerals Sands Project. The site has both a mythological *Waugal* association and a traditional water source significance. The water way was formed by the creative activities of the *Waugal* whose spiritual essence still exists there. Mullering Brook is a significant mythological site to the Noongar People. The Mullering Brook registered site is located approximately 15kms south east, outside of the Atlas Project assessment area.

DPLH 4641 Wongonderrah Camp

DPLH 4641 Wongonderrah Camp is a registered Aboriginal site and is protected under the AHA. The DPLH register lists the site type as a camp with artefacts scatter and water source. Wongonderrah Camp was recorded by O'Connor in 1987 while undertaking a heritage survey with Noongar People (informants where from the Mippy, Rider, Bodney and Colbung families) for the Cooljarloo Minerals Sands Project. Numerous artefacts dating from the recent past, including old kitchen refuse was identified at this camp site used by Aboriginal people in the past. The Wongonderrah Camp is significant to the Noongar People. The Wongonderrah Camp registered site is located approximately 19kms south east, outside of the Atlas Project assessment area.

DPLH 4642 Muralang Pool Camp

DPLH 4642 Muralang Pool Camp is a registered Aboriginal site and is protected under the AHA. The DPLH register lists the site type as mythological, man-made structure, artefacts/scatter, and camp and water source. Muralang Pool Camp was recorded by O'Connor in 1987 while undertaking a heritage survey with Noongar People (informants where from the Mippy, Rider, Bodney and Colbung families) for the Cooljarloo Minerals Sands Project. An old bough-shade structure was identified at this camp site. It was a reliable water source on the sandplain with *Waugal* associations. Muralang Pool Camp is significant to the Noongar People. The Muralang Pool Camp registered site is located approximately 23kms south east, outside of the Atlas Project assessment area.

DPLH 4644 Mullering

DPLH 4644 Mullering is a registered Aboriginal site and is protected under the AHA. The DPLH register lists the site type as an artefact scatter with arch deposit. Mullering was recorded by Quartermaine in 1987 while undertaking an archaeological sites heritage survey for the Cooljarloo Minerals Sands Project. The site file describes Mullering as a very small artefacts scatter containing 17 artefacts (quartz and chert) in an area of 30 m x 10 m. It was said to be positioned on flat farmland on the southern margin of the extensive floodplain of Mullering

Brook, west of the Brand Highway. The disturbed patch of yellow sand where it was situated had been considerably disturbed by agricultural practises and erosion. The Mullering registered site is located approximately 22kms south east, outside of the Atlas Project assessment area.

7.4 DPLH Other Heritage Places

The eight DPLH Other Heritage Places detailed below have been chosen for inclusion in this assessment to demonstrate that important Aboriginal cultural places, features and materials have been recorded within Yued country surrounding the Atlas Project assessment area. A brief review of these will highlight the types of Aboriginal other heritage places already known to exist in the vicinity of the survey area as well as their geomorphological context.

The following eight DPLH Other Heritage Places are located within a reasonable proximity (15kms) to the Atlas Project assessment area:

Table 3: DPLH Other Heritage Places within proximity to the assessment area

DPLH ID	PLACE NAME	TYPE	STATUS	LOCATION
5942	Pinnacles Desert	Artefacts / Scatter, Ceremonial, BP Dating: 6-5,000, Camp, Ochre	Lodged OPEN	328639mE 6604650mN Unreliable
20048	Tombstone Rocks	Mythological, Water Source	Lodged RESTRICTED	Not available when location is restricted
20049	Coomado Swamp	Man-Made Structure, Birth Place, Camp, Hunting Place	Lodged RESTRICTED	Not available when location is restricted
20050	Cooljarloo Swamp	Camp, Hunting Place, Water Source	Lodged RESTRICTED	Not available when location is restricted
28324	Karong (Carnega)	Historical, Man-Made Structure, Camp, Hunting Place, Meeting Place, Water Source	Lodged OPEN	333496mE 6610554mN Unreliable
28325	Kooyar	Artefacts / Scatter, Man-Made Structure, Birth Place, Camp, Meeting Place, Natural Feature, Ochre, Plant Resource, Water Source	Lodged OPEN	332493mE 6609084mN Unreliable

36238	Nambung Burial Site	Skeletal Material / Burial	Lodged RESTRICTED	Not available when location is restricted
37564	Pinnacles Desert	Artefacts / Scatter, Mythological	Lodged RESTRICTED	326003mE 6611513mN Reliable

DPLH 5942 Pinnacles Desert

Pinnacles Desert is listed as lodged on the register and has not yet been assessed under the AHA. The register lists the place type as artefacts / scatter, ceremonial, camp and ochre. The site file information is minimal with only a brief description of two areas of possible burnt stones or camp fire areas along with quartz flakes and debitage being identified at this site. The Pinnacles Desert site is located approximately 12kms south, outside of Atlas Project assessment area.

DPLH 20048 Tombstone Rocks

Some or all of the information that the DPLH holds in relation to this place is restricted and is considered culturally sensitive. This information will only be made available if the DPLH receives written approval from the informants who provided the information. Horizon Heritage Management has not been able to review this restricted site file.

Tombstone Rocks is listed as lodged on the register and has not yet been assessed under the AHA. The register lists the place type as mythological and water source. Tombstone Rocks is located approximately 13kms south, outside of the Atlas Project assessment area.

DPLH 20049 Coomado Swamp

Some or all of the information that the DPLH holds in relation to this place is restricted and is considered culturally sensitive. This information will only be made available if the DPLH receives written approval from the informants who provided the information. Horizon Heritage Management has not been able to review this restricted site file.

Coomado Swamp is listed as lodged on the register and has not yet been assessed under the AHA. The register lists the place type as man-made structure, birth place, hunting place and camp. Coomado Swamp is located approximately 10kms south, outside of the Atlas Project assessment area.

DPLH 20050 Cooljarloo Swamp

Some or all of the information that the DPLH holds in relation to this place is restricted and is considered culturally sensitive. This information will only be made available if the DPLH receives written approval from the informants who provided the information. Horizon Heritage Management has not been able to review this restricted site file.

Cooljarloo Swamp is listed as lodged on the register and has not yet been assessed under the AHA. The register lists the place type as camp, hunting place and water source. Cooljarloo Swamp is located approximately 11kms south, outside of the Atlas Project assessment area.

DPLH 28324 Karong (Carnega)

Karong (Carnega) is listed as lodged on the register and has not yet been assessed under the AHA. The register lists the place type as man-made structure, historical, camp, hunting place, meeting place and water source. However, no specific information pertaining to the man-made structure is given in the site file. Carnega was a homestead and 100 acres of land used by the Nettle and Anderson families. Karong (Carnega) is located approximately 5kms south, outside of the Atlas Project assessment area.

DPLH 28325 Kooyar

Kooyar is listed as lodged on the register and has not yet been assessed under the AHA. Kooyar means frog in the Noongar language. The register lists the place type as man-made structure, plant resource, natural feature, camp, hunting place, meeting place, artefact scatter, birth place and water source. However, no specific information pertaining to the man-made structure or artefacts scatter is given in the site file. Kooyar is a wetlands area where Yued families (Shaw and Warrell) would catch frogs, turtles and gilgies. It was also used as a summer meeting place. Kooyar is located approximately 7kms south, outside of the Atlas Project assessment area.

DPLH 36238 Nambung Burial Site

Some or all of the information that the DPLH holds in relation to this place is restricted and is considered culturally sensitive. This information will only be made available if the DPLH receives written approval from the informants who provided the information. Horizon Heritage Management has not been able to review this restricted site file.

The Nambung Burial Site is listed as lodged on the register and has not yet been assessed under the AHA. The register does not list the place type but it is assumed to be a burial and or skeletal remains place. The Nambung Burial Site is located approximately 7kms west, outside of the Atlas Project assessment area.

DPLH 37564 Pinnacles Desert

Some or all of the information that the DPLH holds in relation to this place is restricted and is considered culturally sensitive. This information will only be made available if the DPLH receives written approval from the informants who provided the information. Horizon Heritage Management has not been able to review this restricted site file.

Pinnacles Desert is listed as lodged on the register and has not yet been assessed under the AHA. The register lists the place type as artefacts scatter and mythological. The Pinnacles Desert features natural limestone structures, some standing as high as 3.5 metres, which were formed approximately 25,000 to 30,000 years ago, after the sea receded and left deposits of sea shells. Over time, coastal winds removed the surrounding sand, leaving the pillars exposed to the elements. The Pinnacles Desert is located approximately 8kms south west, outside of the Atlas Project assessment area.

7.5 Site Types

The following are the main site types associated with the DPLH Registered Sites and Other Heritage Place identified in the AHIS results:

- ***Artefact Scatters***

These sites are concentrations of cultural material associated with a wide range of activities, such as food processing, tool manufacture and seasonal camping. These sites can be small, localised scatters focused around single stone reduction episodes, or larger, higher density scatters containing hundreds or perhaps thousands of artefacts over a large area.

- ***Artefacts***

An artefact site is a place where human activity is identifiable by the presence of a portable object/s (e.g., stone, glass, bone, shell) utilised or modified by Aboriginal people in relation to traditional cultural life past or present.

- ***Mythological***

A place that is connected to the spirit ancestors in their various manifestations of the 'Dreamtime', and which continues to be important and of special significance to persons of Aboriginal descent.

- ***Skeletal Material/Burial:***

A place where Aboriginal skeletal material is buried and/or where mortuary practices occurred.

- ***Camp***

A place used for camping that is connected with the traditional cultural life of Aboriginal people past or present.

- ***Man-made structure***

The placement or arrangement, by Aboriginal people, of stone, wood or other material made into a structure for ceremonial or utilitarian purposes.

- ***Ochre Quarry***

Places where there is evidence for the extraction of stone or ochre.

- ***Water Source***

A place where Aboriginal people would find and utilise water.

7.6 DPLH Heritage Survey Reports

There are twenty heritage survey reports lodged with the DPLH which relate to the five registered sites and eight Other Heritage Places within proximity to the Atlas Project assessment area. Nine are considered relevant to this assessment and are detailed below:

Table 4: DPLH Heritage Survey Reports

DPLH HSR ID	REPORT TITLE	AUTHOR
21048	Addendum to the report on the survey for Aboriginal sites on the TIO2 Corporation's Cooljarloo Mineral Sands Lease near Badginarra	O'Connor, Rory
21864	Report on an ethnographic and archaeological survey of the proposed Emu Downs Windfarm Project Area	Macintyre Dobson & Associates Pty Ltd
22906	Proposed Badgingarra Wind Farm, Badgingarra, WA - an Archaeological Survey	Schlitz, Matt
103334	Report of a survey for Aboriginal sites at the Cooljarloo Mineral Sands project area, near Cataby	Quartermaine, Gary
104307	Survey for archaeological sites along the proposed road alignment from Cervantes - Grey Town Site Road to the Pinnacles Desert, Nambung National Park	Morse, Kate
104262	Report on the survey for Aboriginal sites in the vicinity of the Cooljarloo Mineral Sands Project	O'Connor, Rory
106034	Report on an ethnographic survey of the proposed Pinjar to Cataby overhead power transmission corridor	Fisher, Stuart
106036	The report of an Aboriginal archaeological assessment of the proposed Pinjar to Cataby Transmission Line, Western Australia	Hook, Fiona
200819	Report of an Aboriginal Heritage Survey for Pancontinental Oil and Gas Pty Ltd Seismic Survey in Cataby, Western Australia	Grant Preller and Stuart Johnston

DPLH HSR 21048

O'Connor, R. 1987. *Addendum to the report on the survey for Aboriginal sites on the TIO2 Corporation's Cooljarloo Mineral Sands Lease near Badginarra.*

In April 1987 a meeting was held on country to discuss the results of the site survey undertaken for the Cooljarloo Mineral Sands mine. It was a meeting of the relevant Aboriginal people to discuss the likely effects upon Mullering Brook and other sites in the region from the development of the mine. The major resolution of the meeting was that the Aboriginal people involved had concern for the integrity of Aboriginal sites in the region, but due to the size and importance of the project, would permit disturbance of the Mullering Brook site. It was further discussed to have an area set aside for use as an Aboriginal camp ground somewhere on Mullering Farm.

DPLH HSR 21864

Macintyre Dobson & Associates Pty Ltd. 2005. *Report on an ethnographic and archaeological survey of the proposed Emu Downs Windfarm Project Area.*

This report details an ethnographic survey of the Emu Downs Wind Farm project area approximately 20km southwest of Badgingarra was undertaken by Ken Macintyre with Yued representatives and an archaeological survey was undertaken by Thomas O'Reilly. No ethnographic sites were identified within the project area however a water course was inspected with Yued and the company agreeing that no disturbance would impact upon the creek. No archaeological material or sites were identified within the project area.

DPLH HSR 22906

Schlitz, M. 2007. *Proposed Badgingarra Wind Farm, Badgingarra, WA - An Archaeological Survey.*

This report details an archaeological site survey for the proposed Badgingarra Wind farm project. Two Aboriginal archaeological sites (DPLH 24343 BWF Site 1 & DPLH 24344 BWF Site 2), both quartz scatters and landscape areas of potential archaeological activity (creeks, springs, soaks, rivers and escarpments) were identified. It was recommend that the wind farm development is designed to avoid the two new sites and limit disturbance to the landforms that have potential archaeological sensitivity. A further recommendation was to conduct further consultation with the Yued during all phases of the project.

DPLH HSR 103334

Quartermaine, G. 1987. *Report of a survey for Aboriginal sites at the Cooljarloo Mineral Sands project area, near Cataby.*

This report details an archaeological site survey of the Cooljarloo Mineral Sands Project area by Gary Quartermaine in 1987. The project area is approximately 10km north of Cataby and encompasses an area of approximately 60sqkm. The archaeological survey completed a minimum 10% coverage of the project area with a focus on areas of higher potential like margins of watercourses and swamps and a recently burnt out bush fire area as ground surface visibility was considered high. As a result of the survey one archaeological site was located and recorded. This small quartz and chert artefact scatter was situated on the margin of Mullering Brook. It was located on a yellow sand area used as a minor sand quarry and subject to erosional impacts by water movement. The site was not to be impacted by the project.

DPLH HSR 104262

O'Connor, R. 1987. *Report on the survey for Aboriginal sites in the vicinity of the Cooljarloo Mineral Sands Project.*

This report was part of a preliminary archaeological and ethnographic assessment of the Cooljarloo Mineral Sands project conducted in February 1987. Four ethnographic and one archaeological site were identified during this survey; Cooljarloo Well, Mullering Brook, Wongonderrah Camp, Muralang Pool Camp and Mullering. Among its recommendations, the report stated that Section 18 consent may be required if the proposed mine were to proceed.

Other recommendations included further discussions to be held with Aboriginal People to include their input on the proposed disturbance, particularly in reference to Mullering Brook.

DPLH HSR 104307

Morse, K. 1986. *Survey for archaeological sites along the proposed road alignment from Cervantes - Grey Town Site Road to the Pinnacles Desert, Nambung National Park.*

This report details an archaeological site survey for a proposed new road alignment running 6km south-east from the Cervantes Grey town site road to the Pinnacles Desert in Nambung National Park. The survey was carried out by vehicular transect along the proposed route, with spot checks at landscape features. No sites were recorded. The only features along the proposed route are collapsed limestone areas known to hold water after rain. There was no sign of Aboriginal utilisation of these resources. Recommendations included no further archaeological survey is required and construction of the road can proceed and further surveying and recording of known Aboriginal sites in the Nambung National Park is warranted.

DPLH HSR 106034

Fisher, S. 2002. *Report on an ethnographic survey of the proposed Pinjar to Cataby overhead power transmission corridor.*

This report details ethnographic survey and consultations in March 2002 with numerous Noongar groups and families by Stuart Fisher for the Pinjar to Cataby power transmission corridor project. The Noongar consultants on all survey teams advised that the general area of the survey contains many features of heritage value and interest to Noongar People, but the proposed development would not impact on any of these values or interests. No ethnographic sites were identified during the consultations. The Noongar consultants were pleased that Western Power would minimise ground disturbance and vegetation clearing during the construction phase of the development. Western Power gave a commitment that no ground disturbance would occur within 50m of the water level in the Gingin Brook and Moore River within the survey area. The Noongar consultants requested engagement of heritage monitors for initial ground disturbing activities for the development.

DPLH HSR 106036

Hook, F. 2001. *The report of an Aboriginal archaeological assessment of the proposed Pinjar to Cataby Transmission Line, Western Australia.*

This report details the results of an Aboriginal archaeological assessment by Fiona Hook in 2001 of the Pinjar to Cataby Transmission Line for Western Power. The survey area traverse the Swan Coastal Plain, and crosses sand plain and low sand dunes for most of its length. The notable water sources are Moore River, Gingin Brook, Mullering Brook, Minyulo Brook and the Karakin Lakes. As a result of the survey, no Aboriginal archaeological sites and one isolated chert flake fragment artefact was located. It was recommend that there are no archaeological impediments to the transmission line construction.

DPLH HSR 200819

Preller, G & Johnston, S. 2019. *Report of an Aboriginal Heritage Survey for Pancontinental Oil and Gas Pty Ltd Seismic Survey in Cataby, Western Australia.*

This report details an ethnographic and archaeological survey for Pancontinental Oil and Gas whom are proposing to undertake a Seismic survey to assess for natural gas reserves in the Walyering Project near Cataby. The disturbance level from seismic surveying was considered a low impact activity. No new ethnographic sites or places and no archaeological sites or cultural material were identified during the surveys. The ethnographic survey team recommend that all previously identified heritage sites are avoided, vegetation clearing is kept to a minimum and waterways are avoided. Yued cultural monitors were also suggested for any topsoil removal. The archaeological methodology followed essentially a predictive model where areas considered to have higher archaeological potential were inspected as well as areas with the best ground surface visibility. Relocation of any known archaeological sites was also attempted.

Image Resources Heritage Survey Report:

There is a single heritage survey report on the internal records of Image Resources relevant to the Atlas Project assessment area. This report is detailed below:

Table 5: Image Resources Heritage Survey Report

HSR ID	REPORT TITLE	AUTHOR
Image Resources	The report of an Aboriginal Heritage Survey of E70/2898 and P70/1502, Central West Region, WA	Anthropos Australis

Image Resources HSR

Anthropos Australis. 2008. *The Report of an Aboriginal Heritage Survey of E70/2898 and P70/1502, Central West Region, Western Australia.*

This report details the results of an Aboriginal heritage survey Work Area Clearance for Image Resources whom intend on undertaking an exploration drilling program within E70/2898 and P70/1502, which lie within the Yued Native Title Claim area. The Yued Consultants that participated in the survey; Charlie Shaw, Malcolm Ryder, Colin Headland, Cheryl Chipper, Donelle Indich and Adrian Barron had the opportunity to view the survey area. The Yued Consultants have advised that the proposed Work Area is cleared to proceed excluding all Not Cleared Work Areas. The Yued Working Party Region 5 has also approved the following recommendations;

- It was recommended that Image Resources ensure that its employees and contractors, as appropriate, are advised that all existing drainage lines and freshwater lakes are Not Cleared Work Areas and are therefore excluded from all ground disturbing activity by a buffer of 10 m.
- It was further recommended that the Work Program within the Work Area is undertaken on condition that a ‘Best Practice’ Cultural Heritage Mitigation Plan is developed by Image Resources in partnership with the Yued native title claimant

group and SWALSC, to ensure that there is an agreed process in place for mitigating all sub-surface cultural material that may be uncovered during any proposed ground disturbing activity.

- It was further recommended that all proposed ground disturbing activity be monitored by Yued Heritage Monitors at the cost of Image Resources, to ensure that any sub-surface cultural material including stone artefacts and human skeletal remains that may be uncovered are dealt with appropriately in order to satisfy the cultural obligations of the Yued native title claimant group as well as the statutory processes under the Act.

7.7 Summary Discussion

While some heritage surveys have been undertaken within the broader Shire of Dandaragan area mainly for major developments (like roads, mines, power lines) only a work area clearance Aboriginal heritage survey has been conducted within the Atlas Project assessment area. This survey focused on specific drill lines for exploration drilling works and did not examine the entire area in detail. Agricultural development and vegetation clearing has resulted in heavy disturbance to the original environmental contexts in much of the Shire of Dandaragan. This directly affects the likelihood of locating further surface Aboriginal cultural material (archaeological). Despite this, an indication of potential Aboriginal heritage within the Atlas Project assessment area may be derived from looking at the local environment and ascertaining what sites have previously been reported from such land units, as well as what previous research conducted in the surrounding area has reported.

The creeks and swamps/wetlands were a consistent source of food and water which also often linked campsites along walking tracks and places of mythological and spiritual significance. In the South West of Western Australia the Rainbow Serpent or *Waugal* is central to Noongar cultural beliefs. Noongars believe that the *Waugal* is both a creative force, shaping the landscape during *Nyittiny* (creation times) and a retributive force having the ability to harm, particularly against those who offend it by not carrying out their cultural responsibilities in protecting country, especially water sources. Creation time stories remain in the oral tradition of many Yued Noongar families. It is these set of associations in particular that concern contemporary Yued Noongar people.

The nearby Mullering Brook (DPLH 4640) as a natural feature, water source and mythological associations with the *Waugal* makes it a highly significant place. Its maintenance and protection is vital to help preserve Yued Noongar cultural heritage values. The rivers, pools and wetland areas of the Shire of Dandaragan were part of an extensive communication network that linked Aboriginal groups across the Swan Coastal Plain with other Noongar groups to the south Whadjuk, Gnaala Karla Boodja and Ballardong.

Yued Noongar people have concerns that their culture cannot continue if the natural environment is destroyed. Natural resources are integral to the maintenance, continuance and transmission of Yued Noongar culture. The Yued Noongar's close connection with *boodja* (country) forms the foundation for much of their culture, spirituality and identity.

Through ethnographic research it is clear that waterways are an important natural feature area for Aboriginal People both in prehistoric and contemporary times through mythological associations and after colonisation as occupation areas as seen in the numerous identified camp sites like Wongonderrah Camp and Muralang Pool Camp. These areas would have most likely been utilised by Yued Noongar people to exploit the natural resources found in and around water sources. There is numerous ethnographic evidence that the broader area was also utilised for camping and hunting by families when seasonal water sources were available.

The Yued people knew the country well because they travelled between the inland and the coastal plains always following their seasonal food sources. Water was vital for the Yued Noongar for their survival and spiritual connections. This makes areas with waterways important as they were generally abundant with food and water sources, and an important environment for local Yued Noongar families. The Yued moved around the coastal sand-plain according to the six Noongar seasons, hunting and gathering as they went. Their deep understanding of the land and climate allowed them to live well on animals, fish, insects and plants. The research shows that the Shire of Dandaragan is an important area for Aboriginal people both historically and in the present.

The archaeological results of this assessment do not accurately reflect the historic and prehistoric Aboriginal occupation of the area and instead reflects the highly disturbed nature of the area. The types of archaeological sites that may have been in the area prior to its disturbance based on sites identified in similar but undisturbed areas would be small artefact scatters mainly consisting of quartz and possibly fossiliferous chert on the banks of the waterways or sand dune features. The results of the surveys tend to suggest that the area surrounding the Atlas Project assessment area was occupied on an ephemeral basis for task specific activities rather than long term habitation. It would appear that past Aboriginal usage of the broader area concentrated on the rivers, creeks and wetlands. Remnant material from Yued Noongar camps could be located in areas of less disturbance.

The waterways and lake systems and their surrounding land found in the broader Shire of Dandaragan area were exploited by the Yued Noongar people in pre-contact times and by both Yued Noongar people and Europeans in the years following contact. These places are associated with natural resource utilisation and it has been suggested are often found near to or linked with traditional Yued Noongar campsites. The lack of any major surface expression artefacts or stone tools is not surprising considering the agricultural development and vegetation clearing of the broader Shire of Dandaragan area. The few archaeological surveys and investigations that have been undertaken in the wider region around the assessment area have generally resulted in relatively few Aboriginal archaeological sites being identified. Those that were identified were generally very small artefact scatters associated with drainage features or water sources. The most common type of Aboriginal archaeological material identified as a result of the above mentioned surveys was the occasional isolated artefact.

Ethnographic surveys with Yued Noongar people within the Shire of Dandaragan have shown the importance of the waterways. Some surveys have been conducted over significantly disturbed land and still the importance of the area is stressed by the Aboriginal representatives. The prospect of development impacting waterways is generally unwanted as

they are important places and damage to the water system could result in dire consequences for the Yued Noongar people involved, including death or injury to themselves or family members. While the previous heritage survey reports suggest that Yued Noongar people are unhappy about the developments in the broader area, as they feel that they cannot stop developments and therefore ask for several conditions to be honoured to minimise the impact to their sites. From the previous reports the most common conditions are minimise impacts on sites where possible, ensure no damage to waterways and banks, and the employment of monitors during ground clearance to identify sub-surface material and to ensure contractors stay away from certain sites or areas.

The results of previous heritage surveys and research, as well as the data on registered sites and Other Heritage Places presented above, demonstrates the types of Aboriginal archaeological and ethnographic sites already known to exist in the wider region around the Atlas Project assessment area. In addition to these results, together with the environmental and landscape information, enables predictions to be made about the probable site locations and the types of archaeological material or sites which could reasonably be expected to be found within the Atlas Project assessment area. The underlying geology and vegetation patterning within the assessment area likely preclude sites such as quarries, rock shelter, engravings or art sites. The types of archaeological sites or materials, if any that are most likely to be located within the assessment area would be various types of lithic artefacts either singularly or in scatters. The types of ethnographic sites would likely be mythological associated with the creeks and brooks which cross through the assessment area.

The Aboriginal heritage implications of the proposed Atlas Project must be considered with representatives from the Yued people both as a courtesy and to comply with state legislation. Aboriginal sites whether known or unknown are afforded protection under the *Aboriginal Heritage Act (1972)*. In order to use the land which Aboriginal sites are on the proponent/land owner must apply for consent under Section 18 of the *Aboriginal Heritage Act (1972)*. Ethnographic consultation with the Yued people should be done early with any future development proposal to allow sufficient time to consider the heritage views of the Yued people and to meet any requirements of the *Aboriginal Heritage Act (1972)*.

8 LANDSCAPE SITE DISTRIBUTION

Analysis of the DPHL heritage research results of this assessment indicates the following landscape site distribution:

- **Sand Ridges / Sandy Areas**

Artefact scatters (possibly associated with camp sites) have been located on deflated areas associated with the sand exposures and ground disturbed by development of roads and other infrastructure.

- **Ephemeral Creeks / Riverine Environment / Swamps**

Artefact scatters and camps have been located next to or near to permanent or ephemeral waterways which Aboriginal people would have utilised as resources or as camping or hunting areas. Irregular flowing events and semi-permanent and permanent pools would have provided valuable water and lithic resources. There is also potential for water sources to have mythological and food resource importance.

- **Sand Plains**

Devoid of focal water sources it is likely only used as hunting or travelling country and therefore would likely have only opportunistic stand-alone events with a small amount of stone artefact components.

- **Coastal Dune Features**

The chain of coastal dune features to the west of the periphery of the assessment area would have offered suitable camping areas with some subsistence opportunities and possibly for burial sites due to the soft sand.

9 CURRENT LAND USE ACTIVITY

The land comprising the Atlas Project assessment area is either remnant bushland in the south or predominantly utilised for grazing and agricultural purposes in the north. The assessment area is located between the Badgingarra and Nambung National Parks. Nambung National Park is located approximately 1.5 km to the west of the assessment area and Badgingarra National Park is located approximately 16.5 km to the north-east of the assessment area. Other notable nature reserves in the broader area include; Beekeepers Nature Reserve, Coomallo Nature Reserve and the Wongonderrah Nature Reserve.

10 GEOLOGY & VEGETATION

The assessment area is within the Bassendean Dune System that is a “low-lying area between the Spearwood Dune System and the Gingin Scarp . . . [and] represent a belt of coastal dunes and associated shoreline deposits, which are probably Early to Middle Pleistocene in age” (Mory 1994:3). According to McArthur and Bettenay (1974) the low dunes or hills of the Bassendean Dune System are interspersed with poorly drained areas.

The eastern end of the survey area traverses the Arrowsmith Region. According to Mory (1995) the Arrowsmith Region

. . . contains hills of Jurassic strata usually capped by laterite discordant with bedding. Some of the hills are flat-topped but on most the laterite surface slopes towards the present drainage system. The area is drained by Mullering Brook, Mount Jetty Creek and a number of other unnamed creeks. These watercourses debouch into numerous swamps or small lakes mostly confined to the Bassendean Dune, a slightly undulating surface comprising generally unconsolidated riverine material (McArthur and Bettenay 1974).

The assessment area is located within the Swan Coastal Plain geomorphic region. The term Swan Coastal Plain has been variously applied to all or parts of the biogeographic coastal plain unit that extends from Dunsborough north to approximately Jurien Bay (Beard 1981). The survey area lies within an area of the Drummond Botanical Sub-district mapped by Beard as ‘Banksia low woodland on white sand of coastal plain with numerous patches of heath in swamps’.

The Atlas Project assessment area is a mixture of cleared pasture and the following remanent bushland vegetation types; banksia woodlands, Melaleuca shrublands, swampy heath and samphire flats (360 Environmental 2012). Banksia woodland is typically associated with undulating to flat sand plains with deep sandy soils. Clay pans are known to develop in these areas.

11 LANDSCAPE ASSESSMENT

Why Assess the Landscape?

The possibility of a landscape containing Aboriginal sites will differ between land which has had considerable previous land use, for example intensive land clearing or development, and land which is largely in its natural state or is remote and undisturbed by previous development.

Similarly, some landforms are more likely than others to serve as an indicator of Aboriginal traditional activity than others. Landscape features which may contain Aboriginal sites and should be approached with some caution include, but are not limited to: rock outcrops, rock shelters, caves, alluvial terraces, foreshores and coastal dunes, ranges and hills, natural wetlands, waterholes, springs, gnamma holes, rivers, creeks, streams, swamps, hills and mound formations, or areas with potential archaeological deposits.

An assessment of the area where an activity is proposed may reveal evidence (artefacts or other signs) about previous Aboriginal traditional activity.

Generalised Landscape Review

Landscape features can often be predictors of areas of likely cultural activity. In the coastal regions, rivers, waterways and sand dune systems represent important landscape features and carry a high level of heritage risk. Extensive heritage sites with a high level of complexity are often located around permanent and semi-permanent water sources. Long term camping places, named pools with ceremonial and mythological significance and law grounds are usually located where water is readily available on a seasonal or permanent basis. Ephemeral watercourses present less of a heritage risk, and in areas of unconsolidated drainage heritage sites tend to be small scale and localised, representing single or minimal use camping or hunting places.

Areas of high relief, such as ranges, hills or mesas present a medium level of risk, dependent again on the proximity to water, nature of underlying geology and presence or absence of rock shelters. Heritage sites in these areas tend to be associated with resource exploitation, such as quarrying or primary reduction, hunting sites or seasonal camps. Named hills may carry an associated ceremonial or mythological significance, often gender specific, and be utilised as law grounds or for initiation.

Flat, open country marking the transition between river systems and ridgelines tends toward a low level of heritage risk as these areas represent areas of minimal use. Small scale camping or hunting outposts utilised on a seasonal basis when a particular resource is available may be present. Generally, these areas only contain a sparse background scatter of cultural material, associated with the transitional nature of a migratory population.

The Atlas Project assessment area is generally flat with a surface geology dominated by Bassendean sands. The northern part of the assessment area have been predominantly cleared of most native vegetation and currently being used for agricultural purposes. The southern part of the assessment area is remanent bushland. There are no permanent

watercourses in the assessment area, but a number of ephemeral creeks, drainage lines, lakes and swamps are present.

On the Swan Coastal Plain landscape features associated with water; like rivers, creeks, brooks and wetlands are highly significant to Yued Noongar people. They are a source of food and water, they were used as camping places and they have mythological heritage values; many Yued Noongar people consider waterways to be spiritual repositories, particularly as they are associated with creation stories and are home to many living creatures and plant resources.

Yued Noongar people would have moved along the reaches of the larger local waterways (Nambung River, Bibby Creek and Mount Jetty Creek) hunting and gathering food while moving to and from camps in the interior and coastal areas. The chain of freshwater wetlands that extends through the assessment area support environmental values including riparian vegetation and fauna habitat which would also have provided food and water resources at right time of year. Often significant ephemeral waterways and swamps are associated with important Aboriginal mythological cultural values.

Landscape features within the Atlas Project assessment area, which could possibly contain Aboriginal sites and should therefore be approached with care, include but are not limited to:

- opportunistic areas of exposed ground through the agricultural area and along tacks and fence lines;
- permanent and semi-permanent waterholes, natural springs, gnamma holes, and watercourses (see Map 3);
- areas of bio-geographical significance, such as natural wetlands (see Map 3);
- areas of remanent bushland (see Map 2) and;
- areas with potential archaeological deposit, such as, alluvial terraces, dune deposits and other relevant geo-morphological features.

12 BUSH TUCKER & MEDICINE

Yued Noongar people once lived on the land that is the Atlas Project assessment area. Although traditional bush tucker and medicine are not valued as highly under legislative responsibilities like other (engravings, ceremonial, mythological values) cultural values, bush tucker and medicine is never the less an important connection to country and culture that still plays a part in the lives of many Yued Noongar people. Hunting and food (*merenj*) gathering activities is way contemporary Yued Noongar people still share cultural knowledge and knowledge of country. The Atlas Project assessment area could have potential impacts to bushland areas used traditionally by Yued Noongar people for bush tucker or medicine.

Yued Noongar people have traditionally hunted and gathered food according to the six seasons. In the Noongar language these seasons are named *Bunuru*, *Djeran*, *Makuru*, *Djilba*, *Kambarang* and *Birak* (Boodjar Six Seasons 2020). The Noongar seasons are defined by patterns of weather. The seasons determine which fauna and flora resources are abundant at those times. Yued Noongar people know when it is the season for harvesting by signs in nature. Noongar communities have always taken care to ensure the continued existence of animal and plant species. Vegetable foods collected and eaten by the Noongar included roots, bulbs, tubers, seeds, nuts, fruit and fungus. Other main sources of food most readily available to Yued Noongar people would have been mammals, birds and their eggs, most reptiles, frogs (*kooyar*), fish, turtle (*yarkan*), freshwater crayfish (*gilgie*) and insects (e.g. larvae of beetles).

It is likely the entire Atlas Project assessment area was utilised by past Yued Noongar people as a resource area for food and dietary sustenance. Low lying swamp wetlands and water course areas, even in drier times, were the focus of Noongar economic activities which are present in the assessment area. Frogs, turtles, *gilgie* and water fowl could be sourced from freshwater waterways, swamps and pools. Nearby wetlands like; Cooljarloo Swamp, Coomado Swamp and Kooyar have been previously identified by Noongar people as cultural heritage sites, partly for their resource (food and water) availability. Other heritage places like Wongonderrah Camp and Muralang Pool Camp have also been previously identified which demonstrates that Yued Noongar in contemporary times choose to live on their traditional country.

However, due to the high disturbance and vegetation clearing present in the northern part of the assessment area for agricultural purposes it is unlikely any bush tucker or medicine values are current in this questionable land integrity (see Map 2). That said the southern area remains in a predominantly natural native vegetation state with minimal disturbance from exploration drill lines, fence lines and access tracks and exhibit features which could have been used for bush tucker and medicine (see Map 2).

Within the Banksia woodland areas Noongar people could have found fruits or berries (bush tomato), edible roots and leaves, flower nectar (Banksia, Dryandra, Hakea varieties), seeds and gum (Acacia varieties) and native honey (Eucalyptus) with many having ethnobotanical and cultural significance to Noongar people. The wood from Acacia could be used to make spears, boomerangs, fighting sticks and digging tools. Bark was used to construct watertight huts covered with thatches of grass trees to protect against the cold and wind. The gum from grass trees was used to haft hammers. While the seeds of various trees and plants were

harvested for flour to use in dampers. Sweet gum was collected from the cracks in the branches and trunks of Acacia for eating or to use as medicine for skin ailments and burns. Banksia plants are a food source and host for many species of native fauna. When flowering they attract birds, insects and small marsupials which could then be sourced by Noongar people.

The commonly known Western Australian Christmas tree (*Nuytsia floribunda*) holds special significance to Noongar people and is commonly found in banksia woodlands. Macintyre and Dobson (2020) explain that it is known as *moojar* the Noongar spirit tree with the spirits of dead ancestors resting in the branches. The tree also used to determine seasonal outlooks with the onset of summer established by its either early or late flowering.

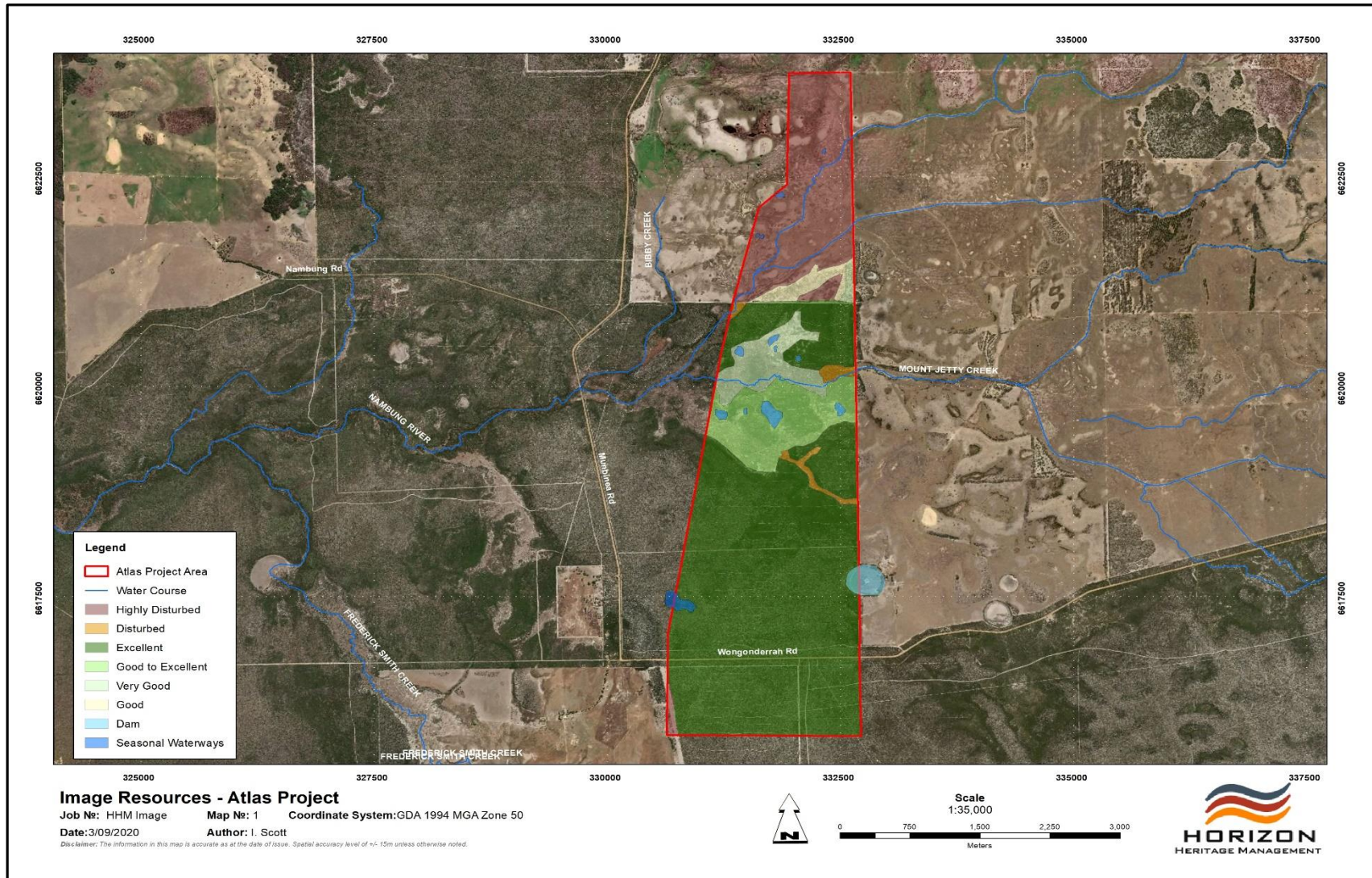
Other potential fauna food species that could be found in the assessment area include wallabies, grey kangaroos, snakes (pythons), lizards (goanna and bobtail) and small marsupials (like the Quenda bandicoot). It is likely many species of birds occur in the woodlands area with emus (*weitj*), bush turkey (Australia Bustard), cockatoos and parrots.

To deal with ailments, Noongar people regularly used a range of remedies, which included medicinal plants. As documented by Hansen (2016) Banksia flowers were drunk to relieve coughs and sore throats, or for a sweet refreshing drink. Pigface crushed leaves were used to treat diarrhoea, dysentery and stomach cramps, and as a gargle to relieve sore throats and mild bacterial or fungal infections of the mouth. The juice of the leaves were used externally, much like aloe vera, as a salve. The Noongar people also ate the fruit as a food.

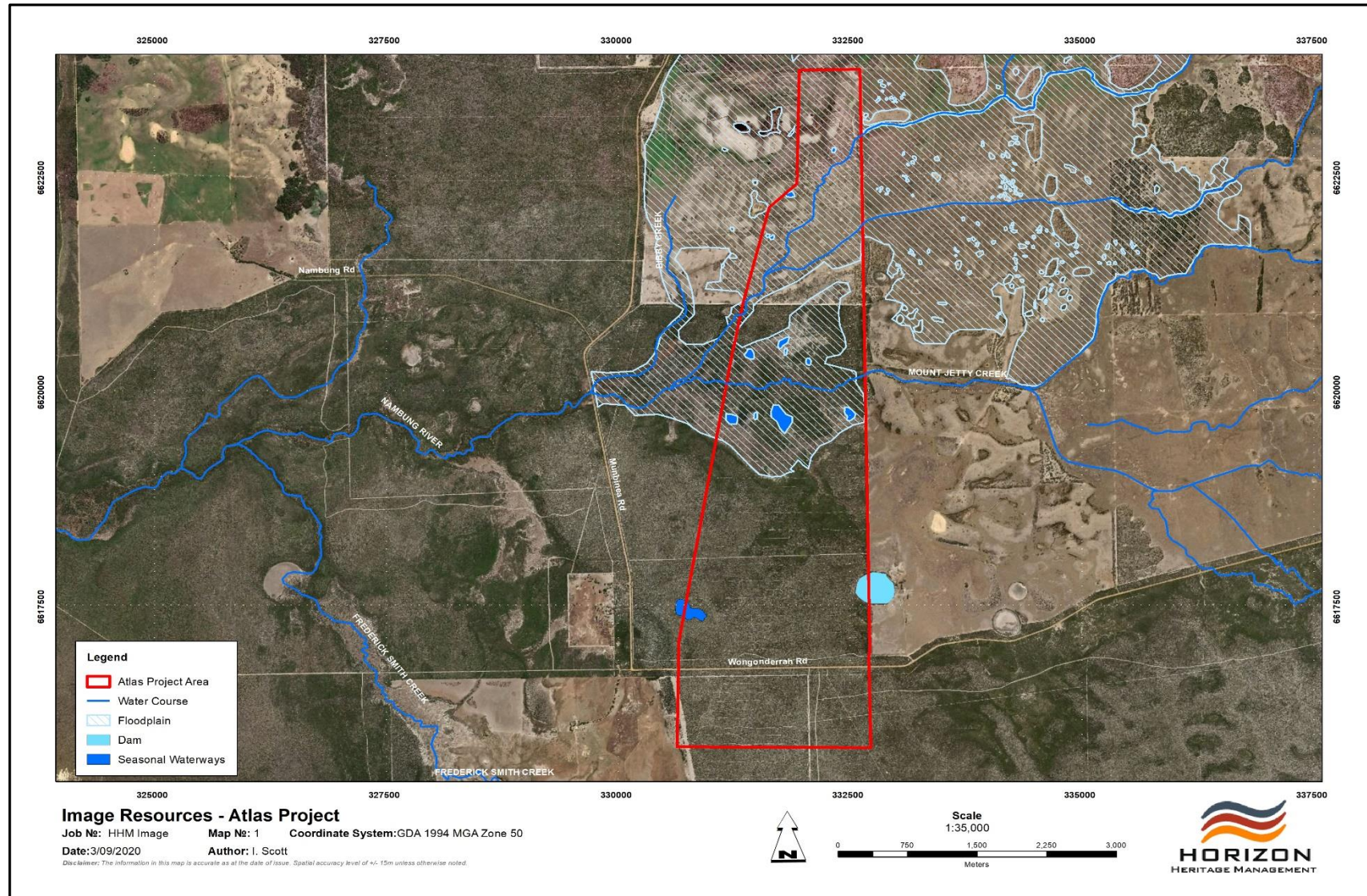
Jam Wattle gum was eaten to treat diarrhoea and ease congestion, while the flowers were crushed and the vapours inhaled to relax the mind for a good night's sleep, or made into weak infusions as a wash to aid healing. Eucalyptus leaves were used for to cure headaches by inhaling vapours from the crushed leaves, by rubbing the crushed leaves on the head and by sleeping in the smoke from a fire. Coughs and colds were relieved by inhaling the vapours from the crushed leaves of specific plants, especially eucalypts.

Goanna and Emu fat were highly prized for the healing of painful joints while ailing health was treated by eating cooked bobtail (*yoorn*), goanna and echidna (*nyingarn*).

Map 2: Atlas Project Assessment Area Land Condition Map



Map 3: Atlas Project Assessment Area Ephemeral Water Landscape Features



13 ASSESSMENT CONCLUSIONS

Horizon Heritage Management makes the following conclusions:

- The key Aboriginal stakeholder group for the Atlas project assessment area is the Yued 'Noongar' people.
- No registered Aboriginal sites or Other Heritage Places are recorded on the DPLH AHIS as being located within the Atlas Project assessment area.
- One Aboriginal heritage work area clearance survey for exploration drill lines has been partially undertaken within the Atlas Project assessment area.
- The northern agricultural land use portion of the Atlas Project assessment area has been highly disturbed from its original natural environment and it is unlikely any surface expressions of in situ cultural material (artefacts) or sites would be present.
- The southern portion of the Atlas Project assessment area remains in a predominantly natural environment and has some potential for surface expressions of in situ cultural material (artefacts) or sites.
- Mount Jetty Creek and the ephemeral lakes and clay pans that are within the Atlas Project assessment area are important landscape features connected with Noongar mythological associations.
- Care should be taken in those areas with some potential to contain archaeological cultural material or have mythological significance. These are around the margins of waterway landscape features; like Mount Jetty Creek and the ephemeral lakes and clay pans that are found within the Atlas Project assessment area.
- Numerous Yued Noongar camps have previously been identified within proximity of the Atlas Project assessment area, and potential remains for contemporary Yued to hold knowledge of any possible Yued land use of the assessment area.
- The Atlas Project assessment area has potential to have flora and fauna resources that would be used by Yued Noongar people as traditional bush tucker and bush medicine.

14 RECOMMENDATION

Horizon Heritage Management makes the following recommendation:

1. Based on the outcomes of this Aboriginal heritage values and traditional uses assessment, Horizon Heritage Management recommends that any future development within the Atlas Project assessment area includes project consultation, Aboriginal traditional uses consultation and an Aboriginal heritage ethnographic and archaeological survey with the Yued Noongar people.

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16 DPLH AHIS RESULTS

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Aboriginal Heritage Inquiry System

List of Registered Aboriginal Sites

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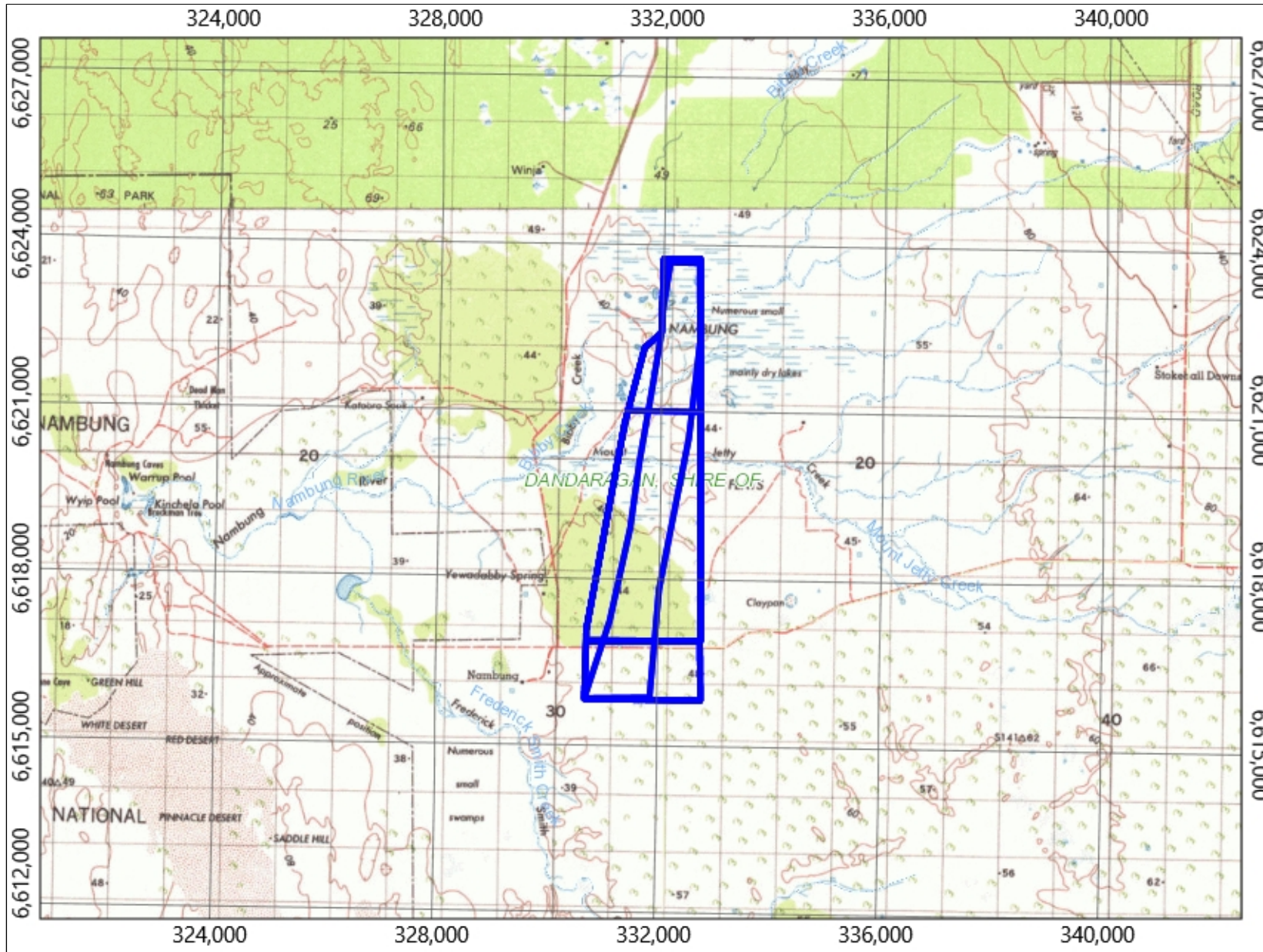
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Map of Registered Aboriginal Sites



Legend

- Registered Aboriginal Site
- Search Area
- Town
- Road
- River
- Local Government Authority

4.01 kilometres

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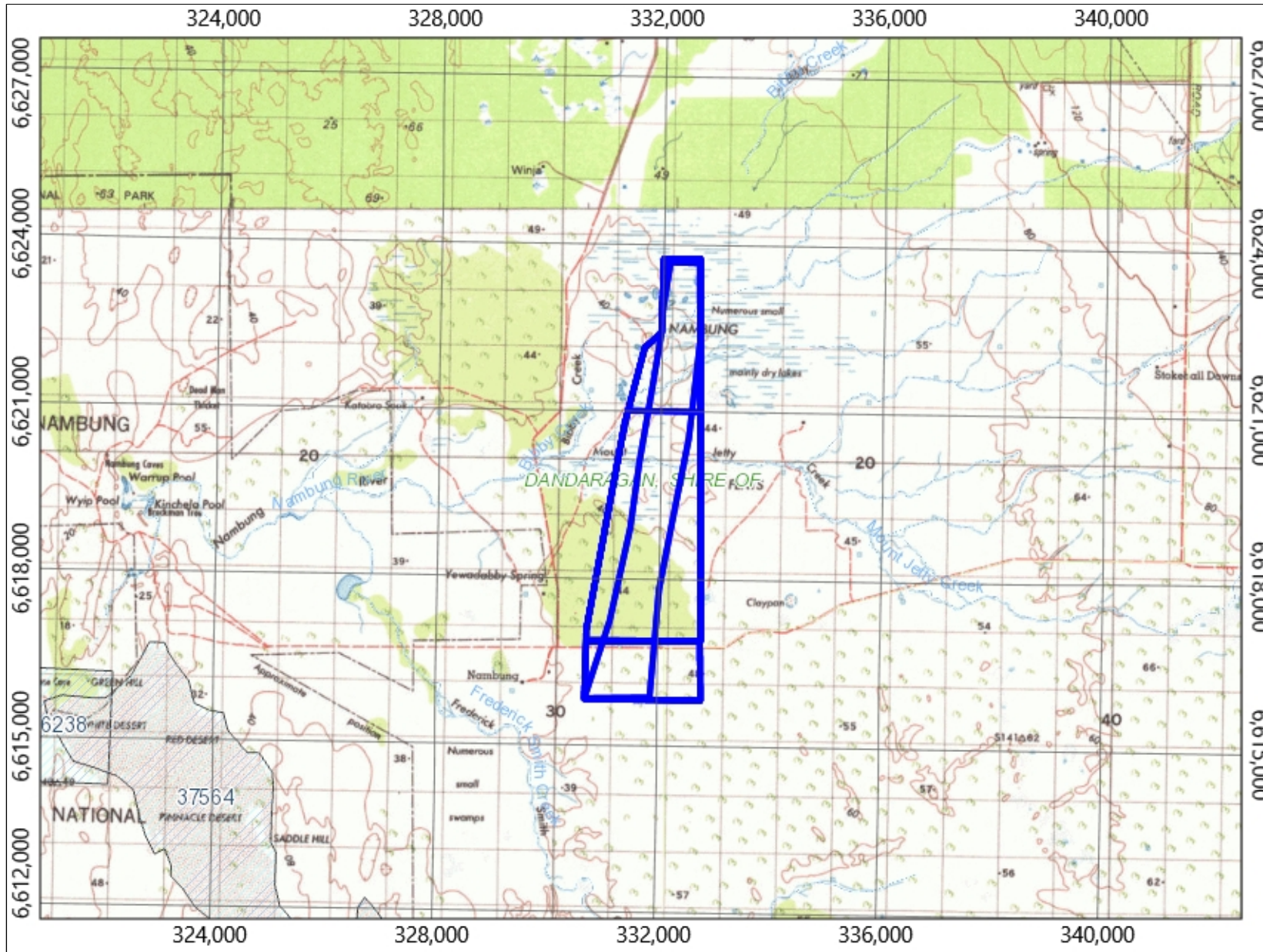
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Legend

- Other Heritage Place
- Search Area
- Town
- Road
- River
- Local Government Authority

4.01 kilometres

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