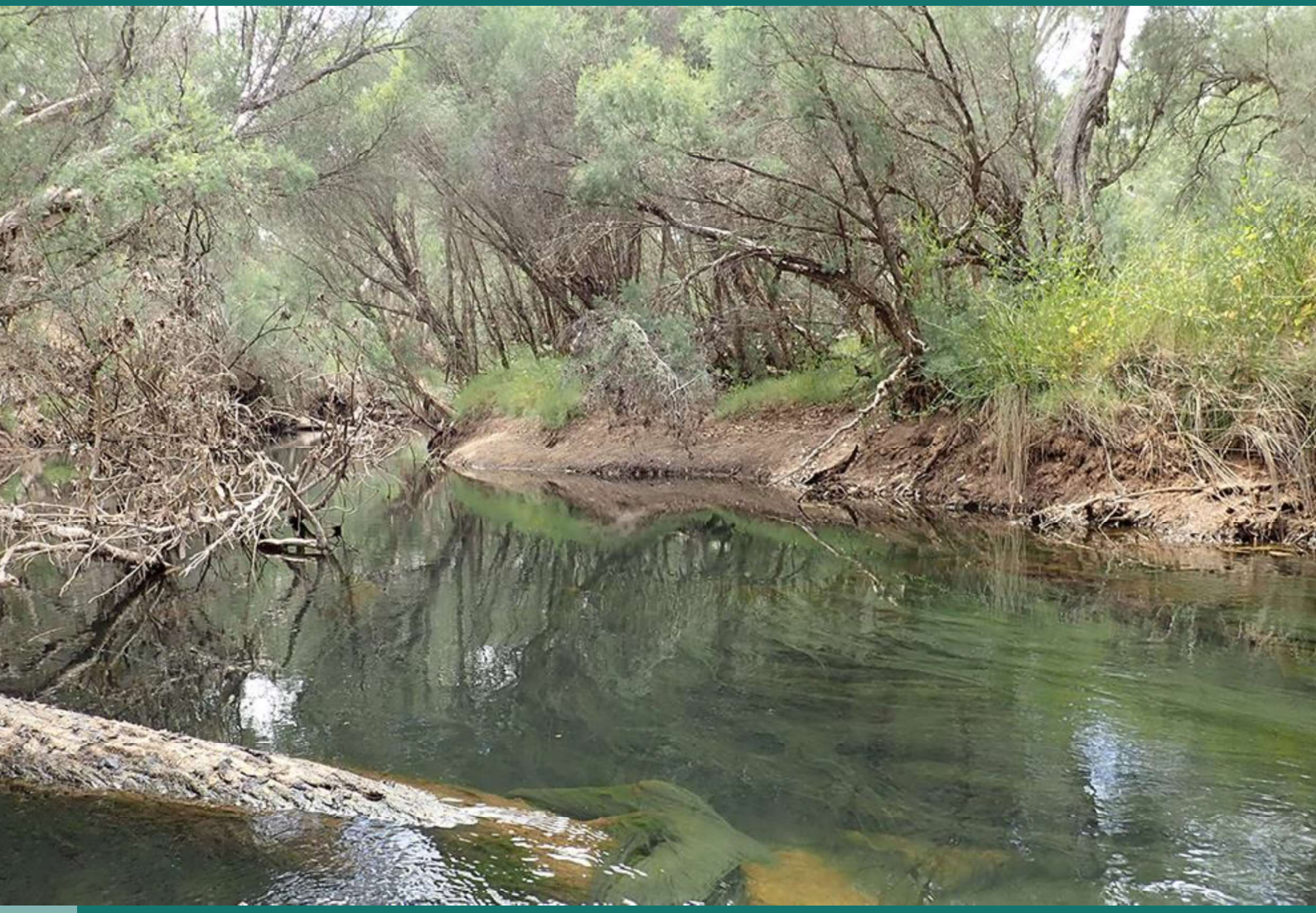
APPENDIX F

Desktop Heritage Assessment (Archae-aus 2022)



ABORIGINAL HERITAGE DUE DILIGENCE REPORT FOR NATIVE VEGETATION CLEARING ON THE MOORE RIVER IN PREPARATION FOR THE PROPOSED OVERHEAD HIGH VOLTAGE LINE RELOCATION, ORANGE SPRINGS, WA

May 2022

For Golder

archae-aus

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The authors are not accountable for omissions and inconsistencies that may result from information which may come to light in the future but was not forthcoming at the time of this research.

Warning

Please be aware that this report may contain images of deceased persons and the use of their names, which in some Aboriginal communities may cause sadness, distress or offence.

Consultation

The Yued Noongar people are part of the Noongar claimants of the Single Noongar Claim (Area 1) WC2003/006. The Due Diligence assessment that has been undertaken by Archae-aus does not require consultation with the representatives of the Yued community; however, all future heritage surveys and decisions about potential developments should include consultation and engagement with the Yued community (as represented by South West Land and Sea Council).

Spatial Information

All spatial information contained in this report uses the Geocentric Datum of Australia (GDA94), Zone 50, unless otherwise specified. All information obtained from Golder is assumed to be accurate to two decimal places. All spatial information obtained during fieldwork was taken using a handheld Garmin GPS with a purported accuracy of ±3 m. Where we report spatial information collected in the field, we have opted for a slightly wider degree of accuracy of ±5 m.

Authorship

This report was written by Fiona Hook (BA (Hons) Prehistoric Historical Archaeology *Sydney*) and edited by Stuart Rapley (BA (Hons Archaeology) [*UWA*], GDipMuseumStuds [*Deakin*]). Maps were drawn by Fiona Hook.

Report Format

Section One introduces the project, the Project Area, the Scope of Works, the surrounding archaeological and ethnographic background of the area, and the relevant legislation used to guide the assessment process.

Section Two provides the results of the Aboriginal heritage due diligence assessment and outlines further cultural heritage management recommendations.

The Appendix section includes a copy of the AHIS (Aboriginal Heritage Inquiry System) register search of Registered Sites and Other Heritage Places within and surrounding the Project Area.

TERMS AND ABBREVIATIONS

Term / Abbreviation	Meaning / Interpretation
ACMC	The body established-under the *Aboriginal Heritage Act 1972* to represent Aboriginal people on heritage matters. Responsible for evaluating sites and advising the Minister regarding applications under section 18 of the AHA (among other duties).
AHA	*Aboriginal Heritage Act 1972* (WA)
Archaeologist	See Project Archaeologist.
Archaeological site	Is a place (or group of physical sites) in which evidence of human past activity is preserved (either prehistoric or historic or contemporary), and which has been, or may be, investigated using the discipline of archaeology and represents a part of the archaeological record.
Artefact	Any object (article, building, container, device, dwelling, ornament, pottery, tool, weapon, work of art etc.) made, affected, used, or modified in some way by humans.
Assessment	Professional opinion based on information that was forthcoming at the time of consideration
BP	Years Before Present, for example, 50,000 BP
Cultural material / archaeological material	Any object (article, building, container, device, dwelling, ornament, pottery, tool, weapon, work of art etc.) made, affected, used, or modified in some way by humans.
DPLH	Department of Planning, Lands and Heritage. Comprises the former WA State government bodies of the State Heritage Office and the Department of Aboriginal Affairs.
Excavation	The systematic and scientific recovery of cultural, material remains of people as a means of obtaining data about past human activity. Excavation is digging or related types of salvage work, scientifically controlled, so as to yield the maximum amount of data.
Feature	A non-moveable/non-portable element of an archaeological site. It is any separate archaeological unit that is not recorded as a structure, a layer, or an isolated artefact; a wall, hearth, are examples of features. A feature carries evidence of human activity and it is any constituent of an archaeological site which is not classed as a find, layer, or structure
Find	Individual movable artefacts that are in original depositional context with each other. Also known as 'loose find'
Fixed Find	An archaeological feature that is immovable, such as the foundations of a building, structures, post holes etc.
Ground Disturbing Works	These are defined as any activity that disturbs the ground below 100 mm. It can include activities such as topsoil clearing, grubbing, geotechnical testing, grading, cutting, trenching, potholing pits (excluding vacuum potholing), deep excavation and directional drilling (launch and retrieval pits)
HA	*Heritage Act 2018* (WA)
Heritage site	See 'Archaeological site' and 'Ethnographic site'
Historical heritage	The study of historical heritage relates to the nature of life in post-contact Australia (1600s onwards). Western Australia's heritage places consist of buildings, landscapes, monuments and other structures or sites that are culturally significant either at a local, State, national or international level.
LGA	Local Government Area
Loose Find	See 'Find'.
Project Area	Native Vegetation land clearing area below the proposed ProTen above ground high-voltage powerline in Orange Springs
SHO	State Heritage Office, now amalgamated into the DPLH
Scope	The nature of the work undertaken as requested by the client/developer.
SLWA	State Library of Western Australia
SWALSC	South West Land and Sea Council

EXECUTIVE SUMMARY

Golder has been engaged by ProTen, to prepare a Native Vegetation Clearing Permit Application (NVCP) and a Beds and Banks Permit to support the operation of an above ground high-voltage powerline in Orange Springs (see Map 1).

The proposed HV powerline extends for approximately 4.6 km long with a width of 14 m (7 m either side of the centre line), covering an estimated 9 Ha. The Project Area is limited to the proposed native vegetation clearing area on the banks of the Moore River.

A search of the Department of Planning, Lands and Heritage's (DPLH's) Aboriginal Heritage Information System (AHIS) showed that no heritage surveys have been carried out over the Project Area (see Map 2).

A search of the DPLH's AHIS revealed that there are two Registered Sites (**20008, 20749**) and one Other Heritage Places **(19183)** that intersect the Project Area (see Map 3).

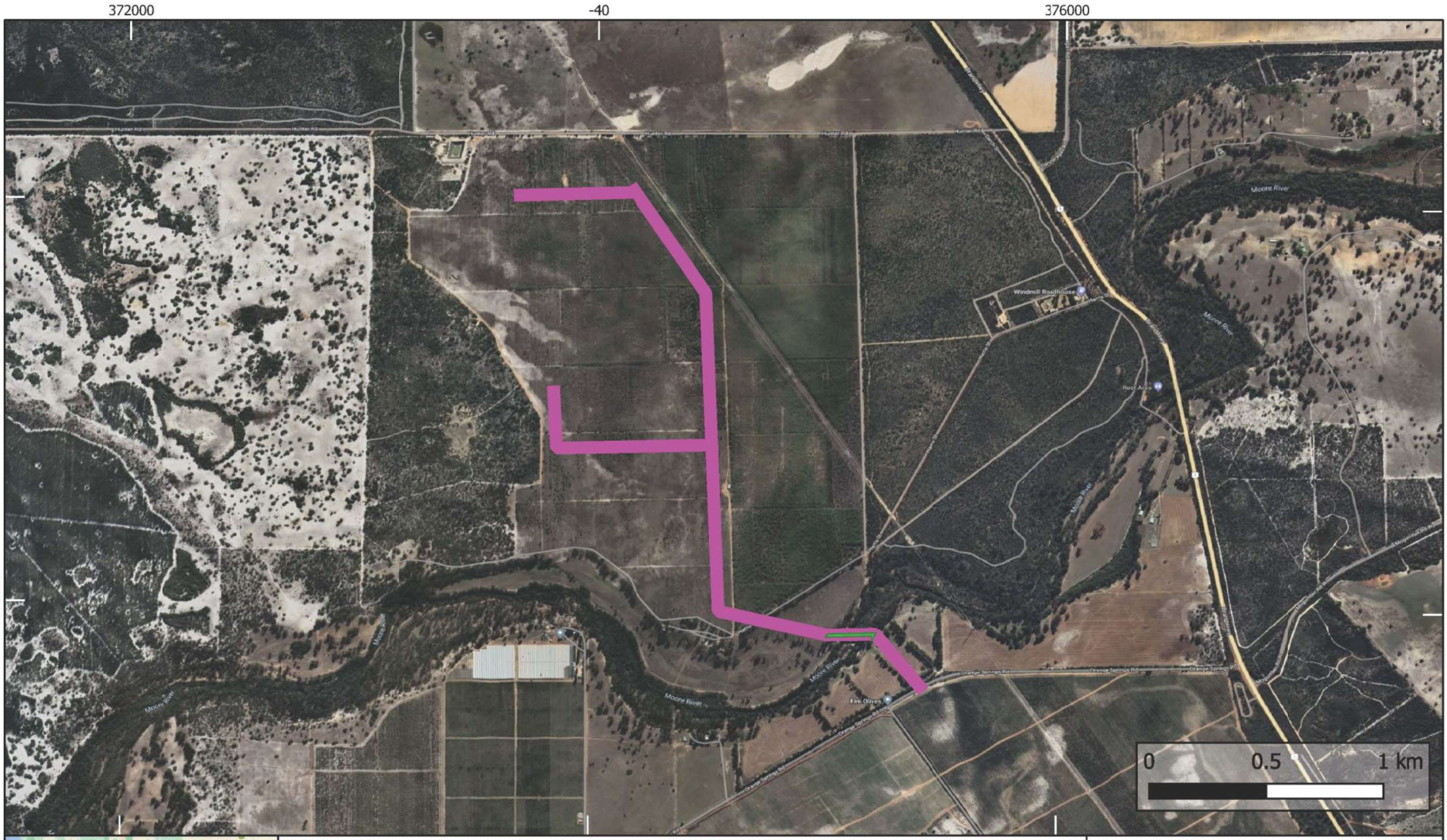
Registered Sites (**20008, 20749**) are mythological sites relating to the Moore River and its banks. The river is part of a highly significant mythological site relating to the Waarkal creation being.

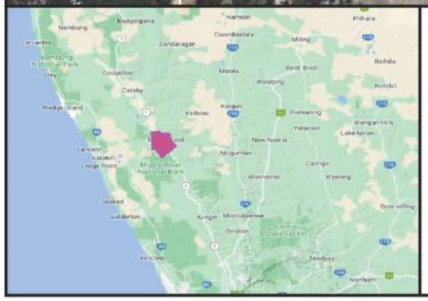
An assessment of potential and risk to Aboriginal heritage was made using the DPLH's heritage risk matrix in the Aboriginal Heritage Due Diligence Guidelines[1]. This process takes into consideration the historic land-use of the Project Area, results of previous heritage surveys in the wider area, types of registered sites found in the wider area, and the landform(s) and environment present in the area.

The assessment revealed that there is **High** risk for impacting Aboriginal Sites within the Project Area. Based on this risk assessment, the DPLH's published Due Diligence Guidelines recommend that ProTen should contact DPLH and Yued.

Based on our experience, Archae-aus recommends that ProTen undertake an Aboriginal archaeological and ethnographic survey of the Project Area with Yued Traditional Owners. This will ensure that any potential Aboriginal heritage sites are identified and provide certainty in the proposed developments.

[1] https://www.wa.gov.au/system/files/2021-05/AH-Due-diligence-guidelines_0.pdf
These guidelines use the type of work being undertaken and the previous land use (in terms of how developed the land is) to assess the likelihood of Aboriginal heritage sites (as defined by the *Aboriginal Heritage Act 1972*).





Legend

Project Area (Vegetation Clearing)

Proposed Powerline Route

archae-aus

Map 1. Overview of Project Area

Drafted by Fiona Hook, 25/5/2022. GDA94, Zone 50. Satellite imagery courtesy of Google and Wiki Maps.

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SECTION ONE – INTRODUCTION

PROJECT BACKGROUND

Golder has been engaged by ProTen, to prepare a Native Vegetation Clearing Permit Application (NVCP) and a Beds and Banks Permit to support the operation of an above ground high-voltage powerline in Orange Springs (see Map 1).

The proposed HV powerline extends for approximately 4.6 km long with a width of 14 m (7 m either side of the centre line), covering an estimated 9 Ha. The Project Area is limited to the proposed native vegetation clearing area on the banks of the Moore River.

Scope of Works

Archae-aus were engaged by Golder to undertake a Heritage Due Diligence Desktop Assessment (report) which involves the following:

- Desktop research into the registered Aboriginal archaeological and ethnographic sites, Other Heritage Places and previous archaeological assessments/surveys within and surrounding the Study Area. This includes requesting site files from the DPLH.
- Internal data search of Archae-aus library and reports.
- A digital search of the State Records Office, InHerit portal, State Library of WA and Trove search for past use evidence of the Study Area including historical plans, maps, articles and photographs. Particular focus will be made for any available information relating to Aboriginal within or close to the Project Area.
- Preparation of GIS maps that outline the Project Area, existing cultural heritage areas, and areas of potential archaeological risk.
- Delivery of a due diligence report to Golder for comment

Based on the results of this assessment (although not part of the current Scope of Works), it may then be necessary to:

- Issue an Activity Notice to South West Land and Sea Council (SWALSC) regarding any proposed heritage assessments.
- Undertake liaison with SWALSC to obtain the names of nominated Yued representatives to take part in the heritage surveys.
- Contact, schedule and engage the SWALSC nominated Yued Traditional representatives for the heritage assessment.
- Undertake the recommended Aboriginal ethnographic and archaeological heritage surveys of the proposed works area. The surveys will be conducted to a Site Identification level sufficient for ProTen to apply for consent under section 18 of the *Aboriginal Heritage Act 1972* (AHA), should this be necessary.
- Detail the results of the survey and provide heritage management recommendations within a report.

LEGISLATION AND GUIDING DOCUMENTS

The following section summarises the relevant legislation and guiding principles that may relate to cultural heritage places within the Study Area.

The Burra Charter

The Burra Charter (Australia ICOMOS Charter for Places of Cultural Significance) is the foundation stone document for conserving Australia's cultural heritage. The Charter encapsulates two important aspects in conserving heritage places. First, it establishes the best practice principles and processes for understanding and assessing a place's significance, as well as developing and implementing a conservation plan. Second, the Charter defines and explains the four primary cultural values that may be ascribed to any place: aesthetic, historic, social or spiritual and scientific. These values are essential as they delineate the types and quality of information needed to accurately determine a heritage place's significance.

Aboriginal Heritage Act 1972

Western Australia's *Aboriginal Heritage Act 1972* (AHA) is the main legislative framework for Aboriginal heritage in the State. Important and significant Aboriginal sites and objects are protected under it. The AHA protects sites and objects that are significant to living Aboriginal people as well as Aboriginal sites of historical, anthropological, archaeological and ethnographic significance. The AHA is currently administered by the DPLH.

The primary sections of the AHA that need to be considered are section 5 which defines the term 'Aboriginal Site' [1] and section 39 (2) which details what the Aboriginal Cultural Materials Committee (ACMC) should have in regard to considering the importance of objects and places. Section 17 of the AHA states that it is an offence to: alter an Aboriginal site in any way, including collecting artefacts; conceal a site or artefact; or excavate, destroy or damage in any way an Aboriginal site or artefact; without the authorisation of the Registrar of Aboriginal Sites under section 16 or the Minister of Aboriginal Affairs under section 18 of the AHA.

Aboriginal heritage sites are also protected under the Commonwealth *Aboriginal and Torres Strait Islander Heritage Protection Act* 1984 (the HPA). The HPA complements state / territory legislation and is intended to be used only as a 'last resort' where state / territory laws and processes prove ineffective. Under the HPA the responsible Minister can make temporary or long-term declarations to protect areas and objects of significance under threat of injury or desecration. The HPA also encourages heritage protection through mediated negotiation and agreement between land users, developers and Aboriginal people.

Aboriginal human remains are protected under the AHA and the HPA. In addition, the discovery of human remains requires that the following people are informed: the State Coroner or local Police under section 17 of the *Coroners Act* 1996; the State Registrar of Aboriginal Sites under section 15 of the AHA and the Federal Minister for Aboriginal Affairs under Section 20 of the HPA.

In terms of broader recognition of Aboriginal rights, the Commonwealth *Native Title Act* (the NTA) recognises the traditional rights and interests to land and waters of Aboriginal and Torres Strait Islander people. Under the NTA, native title claimants can make an application to the Federal Court

[1] http://www.daa.wa.gov.au/en/Heritage-and-Culture/Aboriginal-heritage/Aboriginal-Site-and-other-Heritage-Places/

to have their native title recognised by Australian law. The NTA was extensively amended in 1998, with further amendments occurring in 2007, and again in 2009. Under the future act provisions of the *Native Title Act*, native title holders and registered native title claimants are entitled to certain procedural rights, including a right to be notified of the proposed future act, or a right to object to the act, the opportunity to comment, the right to be consulted, the right to negotiate or the same rights as an ordinary title holder (freeholder).

DPLH Register Status

The Aboriginal Heritage Inquiry System (AHIS), managed by the DPLH, is the tool through which the public can access information about heritage places and their legal status. There are two broad categories by which the AHIS uses to characterise heritage places: Aboriginal Sites (registered sites) or Other Heritage Places.

A registered Aboriginal Site is a place that fulfils the following definitions for protection under section 5 of the AHA:

1. 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.
2. Any sacred, ritual or ceremonial site which is of importance and special significance to persons of Aboriginal descent.
3. Any place which, in the opinion of the Aboriginal Cultural Materials Committee (ACMC), is or was associated with 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.
4. Any place where objects to which the AHA applies are traditionally stored, or to which, under the provisions of the AHA, such objects have been taken or removed.

The category 'Other Heritage Place' is complex and is **not a reliable indicator** for the legal status of a heritage place under the AHA.

The status of most 'Other Heritage Places' is either 'Lodged' or 'Stored Data'.

- Lodged indicates a potential Aboriginal Site that has been reported but not yet assessed by the ACMC. These places are therefore immediately protected under the AHA.
- Stored Data / Not a Site indicates a place that has been assessed by the ACMC, who have decided that the place does not fulfil the above definitions for an Aboriginal Site, protected under the AHA.

A small number of 'Other Heritage Places' have 'Contact DAA/DPLH' as their status, indicating that contact needs to be made with DPLH regarding these places, to access further information/advice.

Thus some 'Other Heritage Places' are protected under the AHA, while others are not. Consequently, Archae-aus would recommend full and transparent consultation with Traditional Owners about all of their heritage places.

Furthermore, the status of both Aboriginal sites and Other Heritage Places may change as the information available or assessment procedures change through time. In the last few years, the register status of some places has changed from one of these categories to another. An apparent shift has occurred in the benchmarks used by the ACMC in the assessment of places as Aboriginal

Sites under section 5 of the AHA. These changes have been most noticeable since 2012, particularly in the outcomes of section 18 applications, despite no change in the AHA itself. For example, some Aboriginal Sites have been re-classified as Other Heritage Places, meaning that they are no longer considered to meet the criteria to be registered as Aboriginal Sites and thus may no longer protected under the AHA. This process is being challenged by Aboriginal groups in the Supreme Court. One decision by the court in April 2015 determined that the ACMC criteria used for assessing places under 5b was incorrect[1]. The ACMC was instructed to reassess those places assessed by the ACMC under 5b since 2012. This reassessment process has begun and several places have been placed back on to the register of Registered Sites under the AHA. Other challenges under 5a assessments are in train through the Supreme Court.

Aboriginal Heritage Due Diligence Guidelines

The Department of DPLH released the Due Diligence Guidelines in 2013 to help guide individuals and companies determine what course of action is necessary for their proposed development and how it relates to Aboriginal heritage and the application of the AHA. The Due Diligence Guidelines were published to ensure that developers do not breach the AHA and to ensure that Aboriginal Heritage is adequately considered as part of the planning of and new development, mines, or infrastructure.

The Due Diligence Guidelines sets out five lists of typical developments activities, ranking them by the level of disturbance they are likely to have on the landscape, and by extension, potential Aboriginal heritage sites that the Aboriginal Heritage Act might apply to (and be protected by). These lists rank from Negligible disturbance to Major Disturbance. It is important to know that these lists are not exhaustive, but rather are compiled to give the reader an understanding of the kinds of activities that may fall under that list type.

Next the Due Diligence Guidelines detail the kind of landscape in which the proposed development is set to take place. These categories are set out to help the reader determine the potential for Aboriginal sites in the Study Area. These categories are established on the basis of the previous land's use; with unaltered environments significantly more likely to yield Aboriginal heritage sites to those that have been highly disturbed. It is important to note however, that some types of Aboriginal sites, such as places of mythological or ceremonial significance may still be present in significantly altered landscapes.

The Due Diligence Guidelines use these two fields as components of the Aboriginal Heritage Risk Matrix. The matrix sets out the resulting risk of Low, Medium or High and gives advice to developers about the actions required for their project depending on the relevant risk rating.

A copy of the Due Diligence Guidelines is provided in Appendix Two.

Land Activities by Category

1. Negligible Disturbance

Activities which are non-invasive and cause negligible or no impact to the land may include:

- walking, photography, filming;
- aerial surveying/magnetic surveys;

[1] https://www.dlapiper.com/~/media/Files/Insights/Publications/2015/04/Supreme_court_clarifies_meaning_of_sacred_site_in_WA.pdf

- use of existing tracks, water courses;
- environmental monitoring;
- water and soils sampling;
- fossicking using hand held instruments;
- spatial measurement; and
- scientific research, using hand held tools.

2. Minimal Disturbance

Activities that cause minimal disturbance to the land may include:

- cultivation/grazing in areas previously cultivated/grazed;
- maintenance of existing paths, walls, roads, tracks, bridges, public infrastructure (e.g. electrical, water, sewage) and community utilities within the existing footprint and adjacent service areas;
- feral animal eradication, weed, vermin and pest control, vegetation control and fire control; and
- light vehicular access and camping.

3. Moderate Disturbance

Activities that cause moderate disturbance to the land may include:

- work program clearance;
- sampling using hand held rig or rig mounted on a light vehicle;
- new fire breaks;
- re-vegetation;
- temporary power lines;
- temporary gravel or soil stockpile; and
- temporary camps.

4. Significant Disturbance

Activities that cause significant disturbance to the land may include:

- creation of new roads or tracks;
- new public access ways, bridges, culverts, flood remediation and erosion levies;
- land clearing over more than a small area;
- intensive soil/core sampling;
- new pipelines;
- significant reclamation works; and
- major landscaping/contouring.

5. Major Disturbance

Activities that cause major and lasting disturbance to the land may include:

- large-scale land clearing;
- exploration drilling;
- bulk sampling, soil excavation;
- mechanical earthmoving, blasting;
- major construction works;
- open cut mining;

- large scale changes to waterways; and
- industrial development.

Previous Land Use

Unaltered Environment - Environments that have never been developed. This might include protected native bushland such as National or State Parks, pristine privately owned bushland or undeveloped land that is the subject of mining or pastoral tenements.

Minimally Altered Environment - Environments such as urban bushland and areas that are seeing vegetation regrowth.

Moderately Altered Environment - Environments that have been the subject of partial clearing, revegetation and minor construction projects.

Significantly Altered Environment - Environments that have been subject to significant alterations including cultivation and clearing.

Built Environment - Environments that have been subject to significant urbanisation. This includes urban environments, towns, metropolitan regions, formerly and heavily disturbed industrial sites and current roadways.

Aboriginal Heritage Risk Matrix

Department of Aboriginal Affairs and Department of the Premier and Cabinet, 2013[2]

Previous Land Use	LAND ACTIVITIES – CATEGORIES 1-5					
		1. Negligible disturbance	2. Minimal disturbance	3. Moderate disturbance	4. Significant disturbance	5. Major disturbance
	Built Environment - e.g. urban environment, towns, metropolitan region.	Low	Low	Low	Low	Medium
	Significantly Altered Environment - e.g. cultivated and cleared land.	Low	Low	Low	Medium	High
	Moderately Altered Environment - e.g. partially cleared lands, re-vegetated landscape.	Low	Low	Medium	Medium	High
	Minimally Altered Environment - e.g urban bush land, regrowth areas	Low	Medium	Medium	High	High
	Unaltered Environment - e.g. protected areas or pristine environment.	Low	Medium	High	High	High

Risk Assessment	Actions
Low Risk (Review)	Review the landscape and proposed activity (see sections 2.4 - 2.8 - assessing the landscape and the activity). Refer to the AHIS.
Medium Risk (Review /Exercise Caution)	Review the landscape and proposed activity (as above). The precautionary principle (see page 2) applies. Refer to the AHIS and contact the DAA. A range of actions may be recommended, including: no action, consultation with the relevant Aboriginal people, an Aboriginal heritage survey or modification of the proposed activity to avoid or minimise site impact.
High Risk (Consult / Survey / Approvals)	Refer to the AHIS. Consult with the DAA and the relevant Aboriginal people. Dependent on consultation outcomes you may need to include: an Aboriginal heritage survey, modification of the proposed activity to avoid or minimise (see sections 2.24 - 2.28) impact to the site and/or other heritage management strategies. The land user may also need to apply for approval or consent (see section 2.26) to the activity.
For major development projects refer to sections 2.10 - 2.12 for further advice.	

[2] https://www.dplh.wa.gov.au/getmedia/74896bd3-4be3-49ed-be75-38ba72f10d72/AH-Due-diligence-guidelines

SECTION TWO – ABORIGINAL HERITAGE CONTEXT

NOONGAR CULTURAL CONNECTION

The Project Area is in Noongar country, also referred to as the 'South-West cultural bloc' by the anthropologist Ronald Berndt (1980:84). Noongar people share linguistic and cultural traditions, a cohesive social structure and kinship network. Traditional Owners with ancestral ties to the Project Area and its surroundings today identify as Yued. They are claimants on the Yued Native Title Group (WC1997/071). Registered in 1998, the Yued Native Title Group is a sub-set of the broader South West Native Title Settlement. In November 2020, a decision was reached by the High Court of Australia which will lead to registration of six Indigenous Land Use Agreements, Yued among them (Figure 1). The Settlement resolves Native Title claims in exchange for other benefits for Noongar people and culture (South West Aboriginal Land and Sea Council, 2021). Yued identity remains strong in Moore River and its surroundings due to ancestral, spiritual and historical connections and a vision for the future.

Noongar people form a distinct cultural bloc now and into the distant past, based on shared linguistic and cultural traditions, a cohesive social structure and kinship network, shared regional identity, and a common geographical connection to the lands and waters that make up the southwest corner of the Australian continent. There are a range of social structures which further delineate Noongar people and connect them to particular parts of the Southwest region. This is articulated succinctly in the Noongar evidence provided to the Federal Court hearings (Federal Court of Australia 2006:38), during which the claimants noted that the southwest region:

> *… was occupied and used by Aboriginal people who spoke dialects of a common language and who acknowledged and observed a common body of laws and customs. Those Aboriginal people recognized local and regional names within the broader society but shared a commonality of belief, language, custom and material culture, which distinguished them from neighbouring Aboriginal groups and societies. Responsibility for and control of, particular areas of land and waters, were exercised by sub-groups or families, but the laws and customs under which the sub-groups possessed those rights and interests were the laws and customs of the broader society.*

The term 'Noongar' also sometimes spelled Nyungar, Nyoongar or other variations, is a common term used almost ubiquitously around the region for local Aboriginal people. However, its use as a term of identity is thought to be a linguistic adaptation that originated during the post-European contact period. It originally meant man in the languages of the Southwest (Bates 1985:47).

The Noongar cultural bloc, also referred to as the "South-West" cultural bloc by Berndt (1980b: 84), incorporates the south-west corner of the Australian continent following a line from around Jurien Bay in the north, to Esperance in the south east, and encompassing all the area between there and the coastline. The boundary between the Noongars and their desert and semi-desert dwelling

neighbours actually follows the botanical boundary between the South West Botanical Province and the arid inland provinces.

Noongar society has its roots deeply etched in the traditional social structures of the pre-contact period and like all societies continues to evolve and change as a result of both internal and external influences. European invasion and subsequent settlement of the region is a major external influence and the impacts on Noongar society have been severe and far-reaching. None the less, Noongar culture and society has evolved, adapted and survived. Among all of the layers of connection and identity that comprise the fabric of Noongar society, perhaps the most fundamental is that of family and kinship. Noongar people identify most fervently with their extended family and they will very often define their primary identity on the basis of family.

Water is a defining feature of Noongar country; lakes, rivers, creeks and all of their tributaries are fundamental to Noongar culture, and thus maintain a special significance. All freshwater sources, including underground water are attributed high spiritual and practical significance in Noongar culture. Noongar culture attaches powerful spiritual associations to waterways through ngitting yarns (creation and dreaming stories), in particular ngitting stories associated with the Waugal, a spiritual snake who is responsible for carving out and creating many of the landscape features we see today. This is an important principle for managing water resources and is an example of the way that Noongar spiritual beliefs dictate a set of principles for the conservation and management of land and water. As the water sources are connected to the ngitting movements of the Waakgardy, they are attributed a sacred status, which then in turn enshrines their protection into Noongar law and custom.

Fundamental to Yued Noongar identity and culture is connection to country. This concept articulates a series of rights and responsibilities that every Noongar person maintains to certain places, landscapes and regions. Perhaps the two most important aspects of connection to country are 1) the responsibility to care for country and 2) the right to speak for country. The responsibility to care for country is something that Noongar people inherit from their ancestors and bequeath to their children. Upholding these responsibilities are fundamental to Noongar culture and identity, and at some level to people's reason for being. On this basis, being able to uphold these responsibilities is pivotal to Noongar people's sense of purpose and self-worth and therefore, well-being. Intertwined with the responsibilities that people maintain to country are rights to make collective decisions affecting country.

"Koora-koora, nidja boodjar indjar, nidja boodjar baan. Boordawan, Wagyl yira-yaakiny —Waggly yoowal koorliny. Baal Yued boodjar koorliny. Boorda, Wakal yoowal-barang Nyoongara boola nidja! Mila, Wagyl wort koorl— bokadja! Nidjabaal Wagyl wort koorl. Baal yira koorliny—Yabara. Wagyl boodjara koorang-kooranginy. Baal Jurien Bay yaakiny-nyininy… Ali, Wagyl kwongkan baaminy, bilya baaminy. Boorda, baal ngarda-koorliny Guilderton. Ali, Wagyl bilya birniny. Baal Bwoora koombar birniny. Yeyi, Yued Nyoongara djinanginy Wagyl nidja. Wordel, Wagyl bwoora-nyininy. Yued kadidjiny nidja. Kaya, Wagyl nidja nyininy. Yeyi, nidja boodjar Wagyl boodjar. Nidja bilya Yued bilya!"

"In the beginning of the Dreaming, this land was dry, this land was sparse. Soon, Wagyl rose up — Wagyl came here. He came to Yued country. Soon, Wagyl brought many Nyoongar people here. Then, Wagyl went away—far away! He

went away. He went up North. Wagyl twisted and turned through the country. He camped at Jurien Bay. There, Wagyl made sandplain, he made rivers. Soon, he went down to Guilderton. There he made rivers; he made big pools. Now, Yued people see Wagyl here. Always, Wagyl lives in the river pool (Yued People believe this.) Yes, Wagyl lives here. Now, this country is Wagyl country. This river is the Yued River." (Mr Charlie Shaw in The Shire of Gingin and the Yued Noongar People Cultural Heritage Management Plan).

"Nidja boodjar ngany deman gaa maarm gaa moort baalup nitchja boodjar, gaa yey nganykurlingas boodjar gnaala moort Jenna biddi kura- kura gnalla gnamma gnaala bilya wer wardennaarluk nyinning kalla mia yey karditj nidja winditj boodjar."

"This country my grandmother's and grandfather's all them this their country and now my children's country, our family walked the tracks for thousands of years our rock holes, our rivers and ocean we sat around campfires now understand this is sacred country for Nyoongars." (Spoken by a Yued Elder in The Shire of Gingin and the Yued Noongar People Cultural Heritage Management Plan).

"Nidja Yued boodjar- ngala kabarli, baal kabarli boodjar. Ngala yorga djena koorl-iny koonda nidja boodjar barang-iny marany nidja boolya nidja koora. Ngalak nidja mara barang-Iny nidja waangkiny ngala kabarli. Nidja waangki-ny baaminy Nyoongar yorgas koort wirn moorditj yeyi benang boordahwan. Noona koort karnya yorga koonda karla nidja boodjar nidja kep yeye nidja boordahwan".

"This is Yued land – our grandmother, and her grandmother's country. Our women walked and camped on this land to gather food and medicine for a long time. We are the keepers of our stories, passed down from our grandmothers. These stories make Nyoongar women's heart and spirit strong today and strong for the future. Show respect for women's places on our land and waters today and in the future." (Mrs May McGuire in The Shire of Gingin and the Yued Noongar People Cultural Heritage Management Plan).

The combination of these rights and responsibilities are the basis for contemporary Noongar custodianship. What this means in a practical sense, is that Noongar people expect to have a 'seat at the table' in decisions that affect their lands and waters. Put another way, Noongar people have a customary set of rights and responsibilities that require them to have real power in all decisions affecting their country. As all Noongar people are now living within the modern economy of Australia, their time and input has costs associated with it. While the AHA stipulates the need to consult with Aboriginal people about a narrowly defined set of places and materials, Noongar people have a custodial interest and responsibility over a much broader set of places and values than those defined by the AHA.

Figure 1. Six regions that form the Southwest Native Title Agreement (Source: Samantha Mickan, 2009)

ARCHAEOLOGICAL RECORD OF THE SWAN COASTAL PLAIN

The majority of the archaeological surveys and more detailed assessments conducted in the Southwest of Western Australia have occurred in the Perth Metropolitan region (Hallam, 1972, 1975, 1977; Anderson, 1984; Strawbridge, 1988; Bowdler, Strawbridge and Schwede, 1991).

The general pattern of archaeological site distribution to emerge from studies conducted in Perth indicates that more sites are located on the Bassendean Sands than in any other geomorphic zone between the Darling Range and the coast (Strawbridge, 1988; e.g. Bowdler, Strawbridge and Schwede, 1991). It has been suggested that the high number of sites on the Bassendean Sands is directly related to the abundant resources associated with the chains of lakes and swamps along the eastern margin of this zone, toward the foothills of the Darling Range (Strawbridge, 1988; Bowdler, Strawbridge and Schwede, 1991).

It has also been suggested that sites located on the Bassendean Sands have little potential for containing undisturbed stratified archaeological deposits (Bowdler et al. 1991). This is suggested to be owing, at least in part, to the fact that the Bassendean Sands consists of a stable core, overlain by a "superficial layer of mobile sands within which artefacts may have been deposited over a long period of time" (Bowdler et al. 1991). There is also the issue of disturbance by a range of European activities, such as farming, in one of the most populous areas of Western Australia. However, more recent excavations in other areas across the Swan coastal plains counter Bowdler et al.'s (1991) assertions. Dortch et al.'s (2009) excavations at Fiona Stanley Hospital show that even after the site was cleared by bulldozers, in-situ archaeological deposits covering 8,000 to 33,000 years BP were still present. Similarly, recent excavations at Beeliar Wetlands (Hook and Dortch, 2017) clearly showed both charcoal and stone artefacts, including those made of fossiliferous chert, in an undisturbed deposits up to 100 cm deep.

Dated sites are rare in the Peth Metropolitan area. However, a number of dated sequences from the Southwest region clearly indicate a Pleistocene antiquity for human occupation. For example, the registered site Upper Swan / ID 4299 has very significant occupation dates for the Perth region and recent re-calibration on the recovered charcoal samples reveals even older dates than was originally reported. These new calibrations indicate a date range from 39,733 cal BP to 44,348 cal BP, for this large, open scatter site. The evidence indicates a Pleistocene occupation of the area, where groups of people camped, prepared fires for cooking and warmth and used cores and hammer stones to manufacture a variety of stone tools. The Upper Swan site contributes to the evidence of the antiquity of occupation of Australia and is highly significant to the story of the Noongar's ancestors and their use of the landscape.

Other early dated sites on the Swan Coastal Plain are located at the site of the Fiona Stanley Hospital dating to 33,000 BP (Dortch, Dortch and Cuthbert, 2009), on an old river terrace in the Helena Valley dated to 29,400 BP (Schwede, 1983, 1990) and a site at Minim Cove near the mouth of the Swan River which has been dated to 9,930 BP (Clark and Dortch, 1977). Yellabidde Cave on the northern fringe of the south-west has also been dated to 25,500 cal. BP with occupation continuing through to the recent past (Monks *et al.*, 2016). Further south, Devils Lair on the Leeuwin – Naturaliste Ridge, was first visited by Aboriginal people approximately 48,000 cal. BP (Turney *et al.*, 2001) with nearby Tunnel Cave first occupied at 26,693 cal. BP (Dortch, 1994, 1996).

Site Location and Assemblage Variation

In her synthesis of the archaeological evidence from research conducted on the Swan Coastal Plain and the Darling Scarp, Anderson (1984) formulated a seasonal land use model of human movement between the Swan Coastal Plain, the Darling Scarp and the Darling Range. A summary of this model is quoted below.

1. Groups essentially based on the Swan Coastal Plain and the Darling Plateau were associated with specific core territories within those zones and had stronger cultural ties within four larger units such as Tindale (1974) outlines.
2. In summer and autumn the plains groups concentrated in larger numbers on the coast, estuaries and larger inland water bodies to collect fish, waterfowl and other water based resources. The very large archaeological sites on the plain are the result of repeated visits to such venues, probably over long periods of time.

3. In winter and early spring, when the coastal resources were less abundant, some of the plain based people moved into the jarrah forest in the Darling Range to relieve the pressure on available food sources; the remainder of the people fragmenting and ranging more widely. The extent of penetration into the densest and most uniform stands of the forest zone was only about 30-35 km. The predominantly small sites throughout the jarrah forest are evidence of the mobility necessitated by less prolific resources and the pursuit of game.
4. In late spring there was a gradual movement of people back toward the coast.
5. The western plateau area of the scarp is seen as having a less distinctly seasonal pattern of movement. The groups would possibly have been more nomadic and moved over wide ranges, taking advantage of the large mammal population and plant foods in the open woodlands.
6. The eastern jarrah forest (i.e. that portion more than 30 km east of the escarpment and gradually grading into wandoo woodland) was exploited by plateau groups, some of whose ranges penetrated well into the jarrah zone. More extensive swamps in the eastern jarrah forest may have allowed use of the area for a greater part of the year, especially if below-ground water was tapped. The large sites near Boddington are consistent with this general interpretation.
7. There was also some less patterned movement, more direct and rapid, through the forest zone from plain to plateau and vice versa by individuals and groups of varying sizes, for specific trade, social and ritual purposes (Anderson 1984:37).

Anderson (1984) used variation in the density of sites per square kilometres in support of her model. Numbers of sites on the Swan Coastal Plain were calculated to range from 3 /km² to 6.5 /km², as opposed to the jarrah forests where site densities varied from 0.8 /km², 1.3 /km², 2 /km² and 5 /km². Artefact densities also varied, with those on the Swan Coastal Plain averaging at around 50,000 /km², and in the jarrah forest near the Darling Scarp returning averages of 24 /km², 52 /km², 75 /km² and a maximum of 190 /km².

The dominant lithic raw material in archaeological sites on the Swan Coastal Plain and the Darling Scarp is vein quartz (Anderson 1984; Quartermaine 1987; Quartermaine 1988; Veitch et al. 1997). Other lithological components recorded in archaeological sites include dolerite, granite, mylonite, crystal quartz, silcrete, glass, and fossiliferous chert. As the Swan Coastal Plain does not possess any sources of natural stone, all of the raw materials, except fossiliferous chert, originate in the Darling Scarp or to the east of the scarp (Anderson 1984). The sources of fossiliferous chert are postulated as having occurred on the Continental Shelf to the west of the current coastline. Consequently, fossiliferous chert may have become unavailable from about 6,000 years ago, when the sea level rose to its present level at the end of the most recent glacial period (Glover, 1984).

In an appraisal of Anderson's model, Veth (1987) found a high number of large sites and high densities of archaeological material in the area now inundated by the Canning Dam. He concluded that this raised the possibility of spring and summer use of the Darling Scarp. Here the flaked stone assemblages were almost entirely dominated by quartz. Nearer to Boddington, whilst still dominated by quartz, flaked stone assemblages were found to include a range of other lithologies including dolerite, with chert, quartzite, calcrete, granite and even flaked glass artefacts also present in small numbers (Anderson 1984).

Variation in the proportions of retouched artefacts were found to vary considerably between different areas from the Darling Scarp to the coast. Proportions of retouched artefacts recorded on archaeological sites indicate that:

- the Swan Coastal Plain includes percentages of retouched artefacts ranging from 9.9% to 17.8%;
- the jarrah forests returned low proportions of retouched artefacts (0.6% to 2.0%) (Veth, Ward and Zlatnik, 1983; Anderson, 1984; Veitch, 1988) and
- one study in the Collie region returned a notably high average of 28.1% (Pearce unreferenced in Anderson 1984).

The generally greater proportion of retouched artefacts on the Swan Coastal Plain may suggest more focussed use of this area as opposed to the jarrah forests (Anderson 1984; Veth 1993). Also, the higher numbers of sites found on the Bassendean Sands may suggest that this area was a prime focus of Aboriginal seasonal occupation.

The available evidence suggests greater site densities on the Swan Coastal Plain, dropping off in the dense jarrah forests, and then rising again in the eastern part of the jarrah forests as the less densely packed wandoo forests begin to dominate. This model continues to rely heavily on the suggestion that the jarrah forest is a relatively resource poor area (Anderson 1984).

In opposition to Anderson's (1984) model, Ferguson (1985) suggested that Aboriginal society in the region made flexible responses to a scattered resource base, leaving little in the way of an archaeological signal. Ferguson (1985) supported Hallam's (1975) model derived from ethno-historical sources. Ferguson suggested that the forests (particularly the karri forests) were less intensively used than the more open coastal plains and eastern woodlands. Similar findings have been reported for other forests in the Southwest region. A study of the southern forests suggests that poor resource availability and low encounter rates for archaeological material occur in forested areas, when compared to coastal plains (MacDonald Hales and Associates n.d.:111). However, the report suggests that the distribution of archaeological material in the forests consists of "small, low density artefact scatters situated in a wide variety of topographic and environmental contexts" (Macdonald Hales and Associates n.d.:17; Veth 1987).

The over-riding pattern of open site location thus far detected on the Swan Coastal Plain has been one where artefact scatters have been located in clearings, where high ground surface visibility makes detection much easier (e.g. McDonald Hales and Associates n.d:106). This aspect of site location begs the question regarding whether this is simply a function of ground surface visibility and whether the detected archaeological record may simply represent a skewed sample.

Another pattern of site location is where artefact scatters have been predominantly found associated with drainage lines and water sources (Pearce, 1981; Veth, 1987). This site patterning is consistent with other regions in Western Australia and reflects not only a need for potable water, but is probably associated with a greater diversity of floristic associations and relatively richer resource zones near to more permanent water sources (e.g. Bowdler et al. 1991; Veth 1987).

One question that research near to the interface between the jarrah forests and the Bassendean Sands may be able to address is a comparison of flaked stone assemblages from these two areas, including a comparison of differences in artefact densities, raw material rationing and flaked stone reduction sequences. Investigations along these lines may assist in further developing ideas about how these areas were used before European settlement (cf. Dobson et al. 1993).

Using traditional models for archaeological site location Anderson (1984) predicted that there will be a higher density of archaeological sites near to water sources and on elevated sandy areas near to water. The assemblages at these sites will tend to be dominated by quartz, with lesser proportions of dolerite, granite, silcrete, quartzite and chert.

PREVIOUS RESEARCH

The following summary of previous research has been compiled from information that is publicly available from DPLH's AHIS. This may not be a comprehensive record of all heritage sites recorded and surveys undertaken, with the possibility that some information may exist in the 'grey literature' held by private individuals and organisations which has not yet been provided to the DPLH for addition into the AHIS. Accordingly, caution should be exercised in areas where no surveys have been completed such as where the Project Area is located, or where surveys have only been completed for parts of the area where the proposed activity is intended. Heritage surveys over only part of the land may not have identified all possible sites. In addition, surveys that took place more than 15 to 20 years ago may not have reliable spatial information.

Aboriginal heritage surveys

A search of the DPLH's AHIS show that no heritage surveys have been carried out over the Project Area (see Map 2).

Aboriginal heritage places

A search of the D DPLH's AHIS revealed that there are two Registered Sites (**20008, 20749**) and one Other Heritage Places **(19183)** that intersect the Project Area (see Map 3).

DPLH 19183 / Red Gully Creek

This site has been assessed by the ACMC as not meeting the criteria of Section 5 of the AHA and is listed as a 'Not a Site' in the DPLH lists. It was recorded as a Mythological Site and Plant Resource that runs along the Red Gully Creek. Site 20008 which is a Registered site follows the same creek.

DPLH 20008 / Gingin Brook Waggyl Site

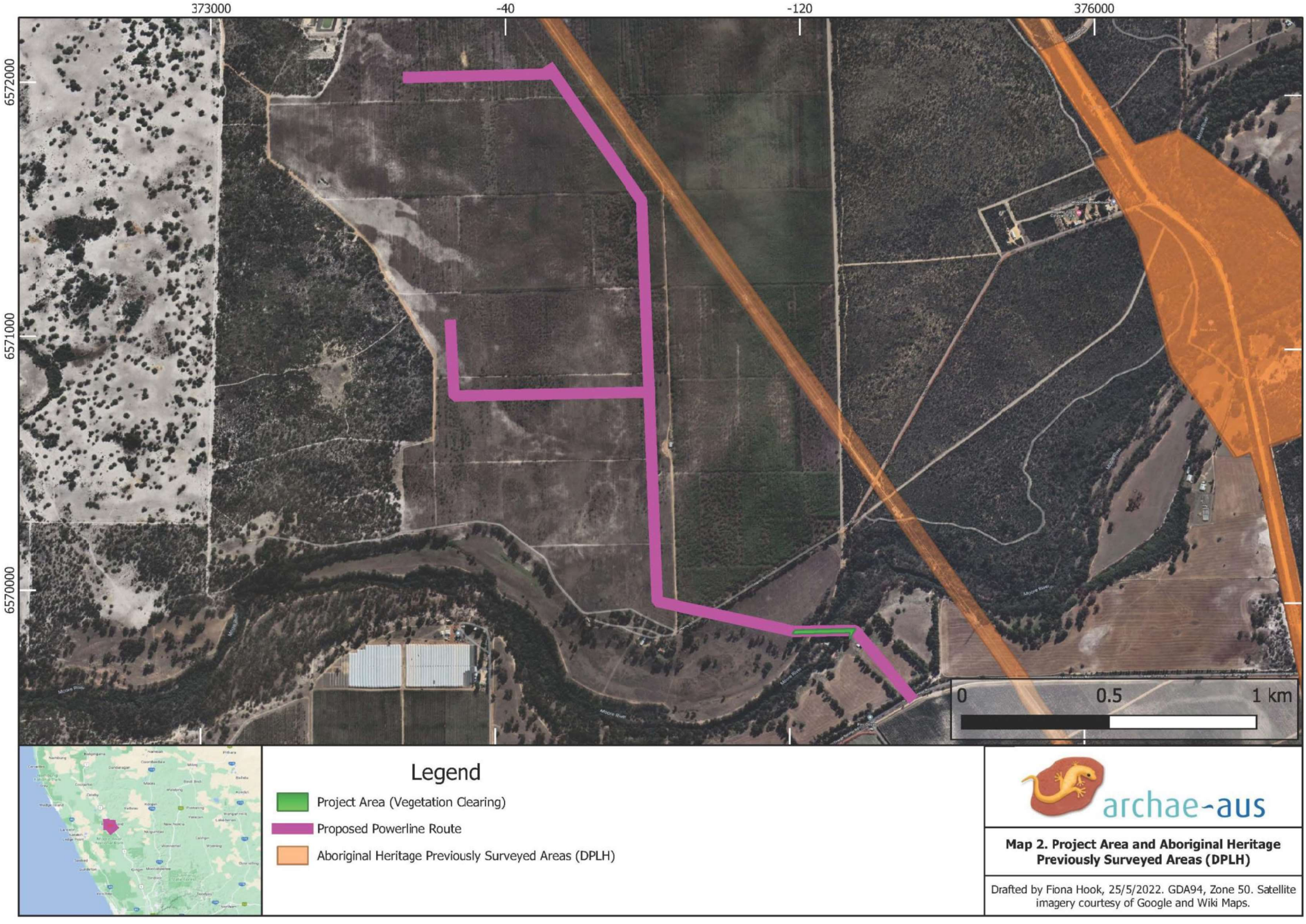
This site is registered historical, mythological, camp, hunting place, plant resource, water source site. It has a buffered boundary, and the actual site follows the route of the waterways, including the Moore River.

DPLH 20749 / Moore River Waugal

This is a Registered mythological site relating to the Moore River and its banks. The river is therefore part of a highly significant mythological site relating to the Waarkal creation being.

In Nyungar Cosmology, the Waarkal is the Creator, the keeper of the fresh water sources. He gave us life and our trilogy of belief in the boodjar – the land – as our mother and nurturer of the Nyungar moort – family and relations – and our katitjin – knowledge so that we could weave that intricate tapestry known as the "web of life". Nyungar Katitjin is people's knowledge based on cosmological stories from the Dreamtime, known as Nyitting to Nyungar, on which cultural knowledge is founded. Nyitting (or Dreamtime) yarns are cosmological stories about events within and beyond the living memories of the Nyungar people. […] Nyitting literally means 'cold time', and refers to the time of creation. " (Collard, Stocker and Rooney, no date).

All freshwater sources, including underground water are attributed high spiritual and practical significance in Noongar culture. This is an important principle for managing water resources, and is an example of the way that Noongar spiritual beliefs, in this case concerning the Waarkal as keeper of the fresh water, dictate a set of principles for the conservation and management of land and water. As the water sources are connected to the Nyitting movements of the Waarkal, they are attributed a sacred status, which then in turn enshrines their protection under Noongar law and custom.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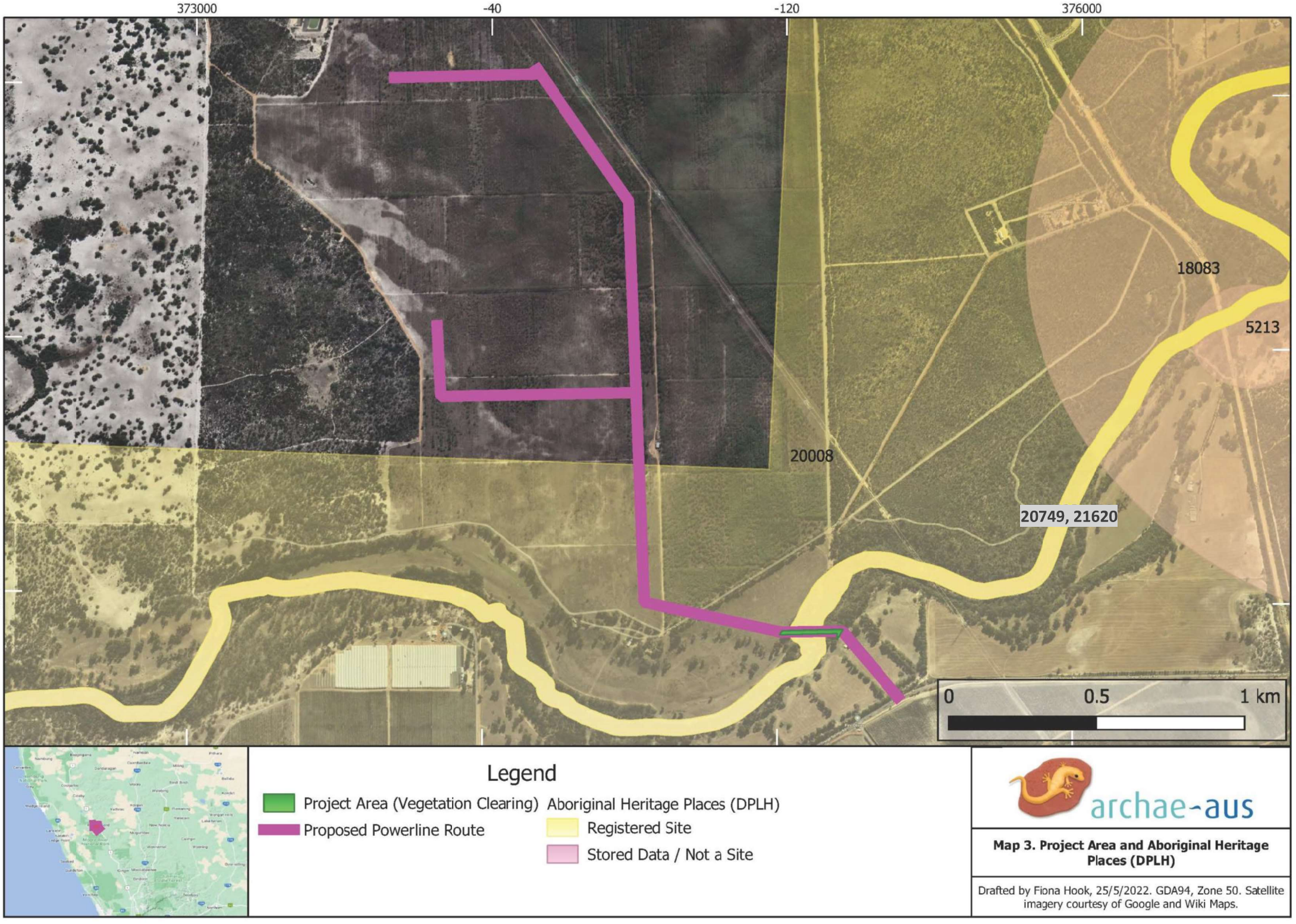
Project Area (Vegetation Clearing)
Proposed Powerline Route
Aboriginal Heritage Previously Surveyed Areas (DPLH)
archae-aus
Map 2. Project Area and Aboriginal Heritage Previously Surveyed Areas (DPLH)
Drafted by Fiona Hook, 25/5/2022. GDA94, Zone 50. Satellite imagery courtesy of Google and Wiki Maps.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Project Area (Vegetation Clearing)
Proposed Powerline Route
Aboriginal Heritage Places (DPLH)
Registered Site
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archae-aus
Map 3. Project Area and Aboriginal Heritage Places (DPLH)
Drafted by Fiona Hook, 25/5/2022. GDA94, Zone 50. Satellite imagery courtesy of Google and Wiki Maps.

SECTION THREE – DUE DILIGENCE ASSESSMENT

ORANGE SPRINGS PROJECT AREA

Golder has been engaged by ProTen, to prepare a Native Vegetation Clearing Permit Application (NVCP) and a Beds and Banks Permit to support the construction/operation of an above ground high-voltage powerline in Orange Springs (see Map 1).

The proposed HV powerline extends for approximately 4.6 km long with a width of 14 m (7 m either side of the centre line), covering an estimated 9 Ha. The Project Area is limited to the proposed native vegetation clearing area on the banks of the Moore River.

The Project Area is entirely undisturbed native vegetation.

Land Activity by Category

The proposed development activity is vegetation clearing, which is classed as moderate disturbance according to the Aboriginal Heritage Due Diligence Guidelines (Department of Aboriginal Affairs and Department of the Premier and Cabinet, 2013).

Previous Land Use

Based on the aerial photographs the Project Area has been subject to minimal ground disturbance. The banks of the Moore River have not been impacted by any land clearing. The previous land use is classified as a Unaltered Environment according to the Aboriginal Heritage Due Diligence Guidelines (Department of Aboriginal Affairs and Department of the Premier and Cabinet, 2013)

RISK ASSESSMENT

An assessment was made under the heritage risk matrix in DPLH's Aboriginal Due Diligence Guidelines which identified the proposed land clearing has a **High** risk of impacting Aboriginal heritage where the proposed works constitute moderate disturbance in a unaltered environment (Figure 2).

Previous Land Use	LAND ACTIVITIES – CATEGORIES 1-5					
		1. Negligible disturbance	2. Minimal disturbance	3. Moderate disturbance	4. Significant disturbance	5. Major disturbance
	Built Environment - e.g. urban environment, towns, metropolitan region.	Low	Low	Low	Low	Medium
	Significantly Altered Environment - e.g. cultivated and cleared land.	Low	Low	Low	Medium	High
	Moderately Altered Environment - e.g. partially cleared lands, re-vegetated landscape.	Low	Low	Medium	Medium	High
	Minimally Altered Environment - e.g. urban bush land, regrowth areas	Low	Medium	Medium	High	High
	Unaltered Environment - e.g. protected areas or pristine environment.	Low	Medium	High	High	High

Risk Assessment	Actions
Low Risk (Review)	Review the landscape and proposed activity (see sections 2.4 - 2.8 - assessing the landscape and the activity). Refer to the AHIS.
Medium Risk (Review /Exercise Caution)	Review the landscape and proposed activity (as above). The precautionary principle (see page 2) applies. Refer to the AHIS and contact the DAA. A range of actions may be recommended, including: no action, consultation with the relevant Aboriginal people, an Aboriginal heritage survey or modification of the proposed activity to avoid or minimise site impact.
High Risk (Consult / Survey / Approvals)	Refer to the AHIS. Consult with the DAA and the relevant Aboriginal people. Dependent on consultation outcomes you may need to include: an Aboriginal heritage survey, modification of the proposed activity to avoid or minimise (see sections 2.24 - 2.28) impact to the site and/or other heritage management strategies. The land user may also need to apply for approval or consent (see section 2.26) to the activity.
For major development projects refer to sections 2.10 - 2.12 for further advice.	

Figure 2. DPLH Aboriginal Heritage Risk Matrix (Department of Aboriginal Affairs and Department of the Premier and Cabinet, 2013)

This assessment and the recommendations will be discussed further in the section below.

DISCUSSION OF ASSESSMENT RESULTS

Based on the assessment, the Project Area has returned a **High Risk** for the proposed works to impact Aboriginal heritage for the following reasons:

- The proposed works constitute moderate disturbance.
- The area has no previous ground disturbance.
- There have been no previous heritage surveys specific to this area.
- The highly significant mythological site and water and food source DPLH 20749 / Moore River Waugal is in the Project Area.
- There is potable water readily available making the area attractive to past Aboriginal people and therefore it is likely that archaeological sites in the form of artefact scatters maybe present in this area.
- The ethnographic values of the river are highly significant; however, they have not been assessed in the area beyond the river.
- People would have been able to access water during certain times of the year in this area owing to the presence of springs and water ways.

Based on this risk assessment, Archae-aus recommends that ProTen undertake an Aboriginal archaeological and ethnographic survey with the involvement of SWALSC nominated Yued representatives.

Archaeological ground-truthing would assess whether there are any surface cultural materials or potential subsurface cultural materials within the Project Area.

Ethnographic consultation on Country (with walk over by the Yued) would ensure that the proposed works do not directly or indirectly affect any tangible (archaeological) or intangible (ethnographic) values. Through this process, a set of management recommendations can be made to guide ProTen in the management of any heritage within the Project Area and in doing so, minimising the risk of impacting any Aboriginal sites.

RECOMMENDATIONS

It is **recommended** that ProTen and its contractors are advised that:

1. A search of the Department of Planning, Lands and Heritage's (DPLH) Aboriginal Heritage Inquiry System (AHIS) revealed that there are two Registered Aboriginal Sites that the Project Area crosses (see Map 3).
2. A Due Diligence Assessment was undertaken for ProTen Project Area using the risk matrix provided in DPLH's Aboriginal Due Diligence Guidelines. The Assessment found that:
    a. The proposed land clearing may constitute **Moderate Disturbance**.
    b. The Project Area is within an **Unaltered Environment**.
    c. There is **High Risk** of impacting Aboriginal Sites in this area.
3. Based on the recommendations of DPLH's Due Diligence Guidelines, ProTen should contact the DPLH and Yued (via SWALSC) regarding the proposed development. His would involve a phone call to heritage officers in both organisations to inform them

of the project and the assessment than a heritage investigation is advised by Archae-aus.

4. It is our opinion that an Aboriginal heritage Survey is required. If ProTen have a NSHA with the Yued then an Activity Notice should be submitted to SWALSC. A copy of this report should be provided to SWALSC as part of the Activity Notice submission.
5. An Aboriginal archaeological and ethnographic heritage survey of the Project Area should be undertaken using qualified archaeologists and anthropologists working with SWALSC-nominated Yued representatives.
6. If ProTen do not have a NSHA with SWALSC then a suitably experienced anthropologist should be engaged to determine which Yued families need to be consulted as part of an Aboriginal Heritage Assessment.

REFERENCES

Anderson, J. (1984) *Between Plateau and Plain. Flexible Responses to varied Environments in Southwestern Australia*, *Occasional Papers in Prehistory*. Canberra: Research School of Pacific Studies, ANU.

Bates, D. (1985) *The Native Tribes of Western Australia*. Edited by I. White. Canberra: National Library of Australia.

Bowdler, S., Strawbridge, L. and Schwede, M. (1991) 'Archaeological mitigation in the Perth Metropolitan Region', *Australian Archaeology*, 32, pp. 21–25.

Clark, J. and Dortch, C. E. (1977) 'A 10,000 year BP radiocarbon date for archaeological finds within a soil of the Spearwood dune system, Mosman Park', *Search*, 8, pp. 36–38.

Collard, L., Stocker, L. and Rooney, A. (no date) *Nyungar Wardan Katitjin Bidi – Derbal Nara: people's ocean knowledge trail of Cockburn Sound and Districts*. Available at: http://www.derbalnara.org.au/index.htm (Accessed: 12 November 2017).

Department of Aboriginal Affairs and Department of the Premier and Cabinet (2013) 'Aboriginal Heritage Due Diligence Guidelines. Version 3.0'. Perth WA, pp. 1–23.

Dortch, J. (1994) 'Pleistocene radiocarbon dates for hearths at Tunnel Cave, South-western Australia', *Australian Archaeology*, 38, pp. 45–46.

Dortch, J. (1996) 'Late Pleistocene and recent Aboriginal occupation at Tunnel Cave and Witchcliffe Rock Shelter, South-western Australia', *Australian Aboriginal Studies*, 1996(2), pp. 51–60.

Dortch, J., Dortch, C. and Cuthbert, D. (2009) *Report of archaeological excavations and related ethnographic consultations during Stage A Forward Works, Fiona Stanley*.

Federal Court of Australia (2006) 'Bennell v State of Western Australia'. FCA 1243.

Ferguson, W. C. (1985) *A Mid Holocene Depopulation of the Australian Southwest*, *Department of Prehistory and Anthropology*. Australian National University.

Glover, J. E. (1984) 'The Geological Sources of Stone for Stone Artefacts in the Perth Basin and Nearby Areas', *Australian Aboriginal Studies*, 1984(1), pp. 17–25.

Hallam, S. J. (1972) 'An archaeological survey of the Perth area, Western Australia, a progress report on art and artefacts, dates and demography', *Australian Institute of Aboriginal Studies Newsletter*, pp. 11–19.

Hallam, S. J. (1975) *Fire and Hearth: a study of Aboriginal usage and European usurpation in south-western Australia*. Canberra: Australian Institute of Aboriginal Studies.

Hallam, S. J. (1977) 'Topographic archaeology and archaeological evidence', in Wright, R. (ed.) *Stone Tools as Cultural Markers*. Canberra: Australian Institute of Aboriginal Studies, pp. 169–177.

Hook, F. and Dortch, J. (2017) *Report of the Shovel Test Pitting Survey of DAA 4107 (Bibra Lake North) within Lot 65, between Walliabup and Coolbellup Lakes, City of Cockburn*.

Hopper, S. D. and Gioia, D. (2004) 'The southwest Australian floristic region: evolution and conservation of a global hot spot of biodiversity', *Annual Review of Ecology, Evolution, and Systematics*, 35, pp. 623–650.

Monks, C. *et al.* (2016) 'Pleistocene occupation of Yellabidde Cave in the northern Swan Coastal Plain, southwestern Australia', *Australian Archaeology*, 82(3), pp. 275–279. doi:

10.1080/03122417.2016.1244216.

Pearce, R. H. (1981) *Worsley Alumina Project, Survey for Aboriginal Sites. Report to Worsley Alumina*. Perth: Department of Indigenous Affairs.

Peterson, N. (1976) 'The natural and cultural areas of Aboriginal Australia: a preliminary analysis of population groupings with adaptive significance', in *Tribes and Boundaries in Australia*. Canberra: Australian Institue of Aboriginal Studies.

Schwede, M. (1983) 'Supertrench- phase 2, a report on excavation results', in Smith, M. (ed.) *Archaeology at ANZAAS*. Perth: Western Australian Museum, pp. 53–62.

Schwede, M. (1990) *Quartz, the Multifaceted Stone: A Regional Prehistory of the Helena River valley on the Swan Coastal Plain of Southwestern Australia*, *Archaeology*. University of Western Australia.

Smith, M. V (1993) *Recherche a l'esperance: A prehistory of the esperance region of south-western Australia*, *Department of Anthropology*. University of Western Australia.

Strawbridge, L. (1988) *Aboriginal Sites in the Perth metropolitan area: a management scheme*. Perth: Department of Indidenous Affairs.

Tindale, N. B. (1974) *Aboriginal Tribes of Australia: Their terrain, environmental controls, distribution, limits and proper names*. California: University of California Press.

Turney, C. S. M. *et al.* (2001) 'Early Human Occupation at Devil's Lair, Southwestern Australia 50,000 years ago', *Quaternary Research*, 55, pp. 3–13.

Veitch, B. (1988) *A report of an archaeological mitigation project at the Harris River Dam Project Area, Collie, Western Australia*. Perth: Department of Indigenous Affairs.

Veth, P. M. (1987) *Report on the significance of Aboriginal sites at the Mundaring, Canning, North Dandalup and South Canning Dam sites*. Perth: Department of Indigenous Affairs.

Veth, P. M., Ward, K. and Zlatnik, M. (1983) *Report on the preliminary survey for Aboriginal archaeological sites at the Harris Dam project area, Collie, including regional ethno-historical data*. Perth: Department of Indigenous Affairs.

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