




Aboriginal Cultural Heritage Assessment Report Cover Sheet

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NGH

ABORIGINAL CULTURAL HERITAGE ASSESSMENT

Yarren Hut Solar Farm, Nyngan NSW

16 June 2020

Report Number: 19-754



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ACRONYMS AND ABBREVIATIONS

ACHA	Aboriginal Cultural Heritage Assessment
AHIMS	Aboriginal heritage information management system
AHIP	Aboriginal Heritage Impact Permit
BayWa	BayWa r.e. Projects Australia Pty Ltd
BCD	Biodiversity and Conservation Division of DPIE
DECCW	Refer to OEH
DP&I	(NSW) Department of Planning and Infrastructure (now DPIE)
DPIE	(NSW) Department of Planning, Industry and Environment
EIA	Environmental impact assessment
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> (NSW)
Heritage Act	<i>Heritage Act 1977</i> (NSW)
LALC	Local Aboriginal Land Council
NPW Act	<i>National Parks And Wildlife Act 1974</i> (NSW)
NSW	New South Wales
OEH	(NSW) Office of Environment and Heritage, formerly Department of Environment, Climate Change and Water
PAD	Potential Archaeological Deposit
REF	Review of Environmental Factors

EXECUTIVE SUMMARY

INTRODUCTION

NGH Pty Ltd (NGH) was commissioned by Bay Wa r.e. Projects Australia Pty Ltd (BayWa) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) for a proposed 28 MegaWatt (MW) solar farm, approximately 17 kilometres (km) north west of Nyngan, NSW (Figure 1-1). The subject land includes Lot 21 DP704061 covering 1204 hectares (ha) of flat cultivated land of which 92 ha would be subdivided for the proposed solar farm development. The development site is within the Bogan Shire Local Government Area (LGA) and is bound by the Mitchell Highway to the east and private pastoral land to the south, west and north (Figure 1-2). The land is currently utilised for primary production including cropping and grazing.

The proposal infrastructure includes solar arrays, trackers, modules, inverters, a substation / switchyard underground cabling, security fencing and a cable run to connect the solar farm to the Essential Energy 810/4 66 kV feeder.

BayWa are seeking to undertake work that may impact Aboriginal heritage objects. The proposal is listed as a State Significant Development (SSD) and the Secretary's Environmental Assessment Requirements (SEARs) which will be issued for the project will likely identify Aboriginal heritage as a specific issue to be addressed by the Environmental Impact Statement (EIS). In anticipation of this, NGH has commenced undertaking an ACHA in accordance with relevant guidelines.

This ACHA Report was prepared in line with the following:

- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW
<http://www.environment.nsw.gov.au/resources/cultureheritage/20110263ACHguide.pdf>
- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales
<http://www.environment.nsw.gov.au/resources/cultureheritage/10783FinalArchCoP.pdf>
- Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (ACHCRP)
<http://www.environment.nsw.gov.au/resources/cultureheritage/commconsultation/09781ACHconsultreq.pdf>

The above codes and guides are issued by the Biodiversity and Conservation Division (BCD, formerly OEH) and are followed for most Aboriginal heritage assessments. The approach being undertaken by NGH will therefore be consistent with other heritage assessments undertaken in NSW.

An Aboriginal Heritage Impact Permit (AHIP) issued under the NPW Act would not be required for the project because, in accordance with Part 4 of the EP&A Act, a consent for SSD projects is issued by the Minister for Planning and includes conditions relating to Aboriginal heritage as required. However, Aboriginal heritage must be considered in the EIS including assessment under relevant guidelines as outlined above and conducting adequate consultation with the Aboriginal community.

PROJECT PROPOSAL

The Yarren Hut Solar Farm proposal area has been selected due to excellent solar exposure, access to major roads and the grid transmission network. The use of the site would be based on a lease agreement between the proponent and the landowner for the life of the project.

The proposal involves the construction of a ground-mounted photovoltaic solar farm which would generate approximately 28 MW alternating current (AC) of renewable energy.

The design of the proposed development is somewhat adaptable and would be refined to avoid adverse impacts where feasible, and to minimise/mitigate environmental impacts if avoidance is not possible. The design would consider the results of consultation with relevant Aboriginal stakeholders, and the ACHA and EIS when prepared.

The proposal would consist of the following components:

- Single-axis tracker photovoltaic solar panels mounted on steel frames (approximately 84,000 PV solar panels).
- Underground electrical conduits and cabling to connect the arrays and the inverters and transformers.
- Inverters, transformers and electrical conduits.
- Onsite substation / switchyard.
- 66 kV electrical transmission line to connect the proposal to the existing Essential Energy Nyngan to Bourke transmission line.
- Site office, site compound, vehicle parking areas, access tracks and perimeter fencing.
- Site access from the Mitchell Highway.

The proposal is expected to operate for 50 years. The construction phase of the proposal planned to commence in Q3 2021 and would last 6 months. After the initial operating period, the solar farm would either be decommissioned, removing all above-ground infrastructure and returning the site to its existing land capability, or upgraded with new PV equipment. The proposed development has an estimated capital investment cost greater than \$30 million. The proposal is therefore classified as SSD under Part 4 of the EP&A Act.

ABORIGINAL CONSULTATION

The consultation with Aboriginal stakeholders was undertaken in accordance with clause 60 (formerly 80c) of the *National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2019* following the consultation steps outlined in the (ACHCRP) guide provided by OEH (now BCD).

The full list of consultation steps, including those groups and individuals that were contacted and undertaken and a consultation log is provided in Appendix A.

As a result of this process two groups registered their interest in the proposal as listed below.

- Bogan Aboriginal Corporation; and
- Corroboree Aboriginal Corporation.

No other party registered their interest, including the entities and individuals recommended by DPIE.

The fieldwork was organised, the two registered parties were asked to participate in the survey fieldwork.

A copy of the draft report was provided to all the registered parties for comment on 14 May 2020, with responses due by 11 June 2020. The EIS and ACHA were provided to DPIE concurrently with the registered party review. No additional comments on the report were received from the registered Aboriginal parties.

ARCHAEOLOGICAL CONTEXT

The assessment included a review of relevant information relating to the landscapes within the proposal area. Included in this was a search of the AHIMS database. There were no sites previously recorded within the AHIMS database within the proposal area. No sites fall within the current assessment area and the closest known sites are over 12 km from the proposed solar farm boundary. These include a modified tree on the Mitchell Highway (AHIMS# 26-3-0002), a ceremonial bora ring and carved tree on the Bogan River (AHIMS# 27-1-0003) and two artefact sites (AHIMS# 27-4-0247 and 27-4-0248) to the west of Nyngan. All other remaining sites within the 20 km search area are centred around Nyngan and have been identified based on targeted surveys for proposed development.

No previous investigations have been completed for the current assessment area; however, several have been undertaken in the wider Nyngan region. The results of previous archaeological surveys in the region demonstrate that there is a strong, complex and varied pattern of human use and movement through the landscape. This behaviour is recorded as a range of artefact and site types distributed and concentrated in specific landforms across the region. There appears to be a strong association between the presence of

potential resources for Aboriginal use and the presence of archaeological sites. Areas directly associated with water and or elevated ground appear to have the greatest potential for identification of Aboriginal cultural material.

Based on previous archaeological investigations in the region and knowledge of Wiradjuri cultural practices and traditional activities the proposal area has the possibility of containing archaeological sites, especially given that Aboriginal people have lived in the region for tens of thousands of years. This would most likely be in the form of quartz lithic scatters, isolated artefacts and scarred trees in remnant old growth vegetation areas bordering the proposal area and/or as isolated paddock trees.

SURVEY RESULTS

Three Aboriginal sites were identified and recorded during the completion of the survey, including two hearths and one scarred tree. In addition to this, three additional “potential” scarred trees were also recorded, however the final assessment of these was that the scarring was not the result of cultural modification by past Aboriginal people. The locations of all the recorded trees are outside the proposed impact area of the development.

Two additional trees were identified containing scars, however on inspection, these were assessed to be the result of natural damage or damage as a result of machinery during fence construction and were not recorded as culturally modified trees as a result of this assessment.

AHIMS	Name	Type
TBC	NGH Yarren Hut Hth1	Hearth with artefact
TBC	NGH Yarren Hut Hth2	Hearth
TBC	NGH Yarren Hut ST1	Scarred Tree

POTENTIAL IMPACTS

The potential impacted by the development are any social and cultural values attributed to the artefacts and the sites by the registered Aboriginal parties. The extent to which the loss of sites or parts of the sites would impact on the community is something only the Aboriginal community can articulate.

The impact to values for this development are summarised in Table 7-2 above.

The impact to identified scientific values of the site NGH Yarren Hut Hth2, if it were to be impacted by the current proposal is considered low. However, the intrinsic values of the Aboriginal objects themselves may be affected by the development of the site. Any removal of the artefacts, or their breakage would reduce the low scientific value they retain. It is noted that the proposal should be amended to avoid impacts to this site.

The sites NGH Yarren Hut Hth1 (hearth with artefacts) and NGH Yarren Hut ST1 (scarred tree) will not be impacted by the project as per the proposed design outlined by this report.

No other values have been identified that would be affected by the development proposal.

RECOMMENDATIONS

It is recommended that:

1. The proposed development should be redesigned in order to avoid impacts to the location of NGH Yarren Hut Hth2, on the western boundary of the development footprint. A buffer of 10 metres around the location of the site must be established using barrier mesh fencing or similar, to be placed prior to

the commencement of any proposed works. Where avoidance is not possible, further archaeological works in the form of salvage will be required.

2. The location of NGH Yarren Hut Hth1 should be protected by the placement of barrier mesh fencing or similar delineating a 10-metre buffer around the location of the recorded site.
3. The location of NGH Yarren Hut ST1 will not be subject to any impacts as a result of the proposal per current design plans. This site must not be subject to any direct or indirect impacts as a result of the development, including movement of vehicles and machinery on site or maintenance of any existing or new facilities.
4. Where recommendations 1 to 3 are met, the proposal may proceed with caution within the development footprint. No additional archaeological investigation is required for this site.
5. BayWa must prepare a Cultural Heritage Management Plan (CHMP) to manage the existing sites near the proposed development and to address the potential for finding additional Aboriginal objects during the construction of the solar farm. The CHMP will outline an unexpected finds protocol to deal with construction activity. Preparation of the CHMP should be undertaken in consultation with the registered Aboriginal parties.
6. In the unlikely event that human remains are discovered during the construction, all work must cease in the immediate vicinity. OEH, the local police and the registered Aboriginal parties should be notified. Further assessment would be undertaken to determine if the remains were Aboriginal or non-Aboriginal.
7. Further archaeological assessment would be required if the proposal activity extends beyond the area of the current investigation. This would include consultation with the registered Aboriginal party and may include further field survey.

1. INTRODUCTION

NGH Pty Ltd (NGH) was commissioned by Bay Wa r.e. Projects Australia Pty Ltd (BayWa) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) for a proposed 28 MegaWatt (MW) solar farm, approximately 17 kilometres (km) north west of Nyngan, NSW (Figure 1-1). The subject land includes Lot 21 DP704061 covering 1204 hectares (ha) of flat cultivated land of which 92 ha would be subdivided for the proposed solar farm development. The development site is within the Bogan Shire Local Government Area (LGA) and is bound by the Mitchell Highway to the east and private pastoral land to the south, west and north (Figure 1-2). The land is currently utilised for primary production including cropping and grazing.

The proposal infrastructure includes solar arrays, trackers, modules, inverters, a substation / switchyard underground cabling, security fencing and a cable run to connect the solar farm to the Essential Energy 810/4 66 kV feeder.

BayWa are seeking to undertake work that may impact Aboriginal heritage objects. The proposal is listed as a State Significant Development (SSD) and the Secretary's Environmental Assessment Requirements (SEARs) which will be issued for the project will likely identify Aboriginal heritage as a specific issue to be addressed by the Environmental Impact Statement (EIS). In anticipation of this, NGH has commenced undertaking an ACHA in accordance with relevant guidelines.

The proposed solar farm development would involve ground disturbance that has the potential to impact on Aboriginal heritage sites and objects located within the proposal area. Aboriginal objects are protected under the NSW *National Parks and Wildlife Act 1974* (NPW Act). The purpose of an ACHA report is to investigate the presence of any Aboriginal sites and to assess the impacts and provide management strategies that may mitigate any impact. An Aboriginal Heritage Impact Permit (AHIP) issued under the NPW Act would not be required for the project because, in accordance with Part 4 of the EP&A Act, a consent for SSD projects is issued by the Minister for Planning and includes conditions relating to Aboriginal heritage as required. However, Aboriginal heritage must be considered in the EIS including assessment under relevant guidelines as outlined above, and by conducting adequate consultation with the Aboriginal community.

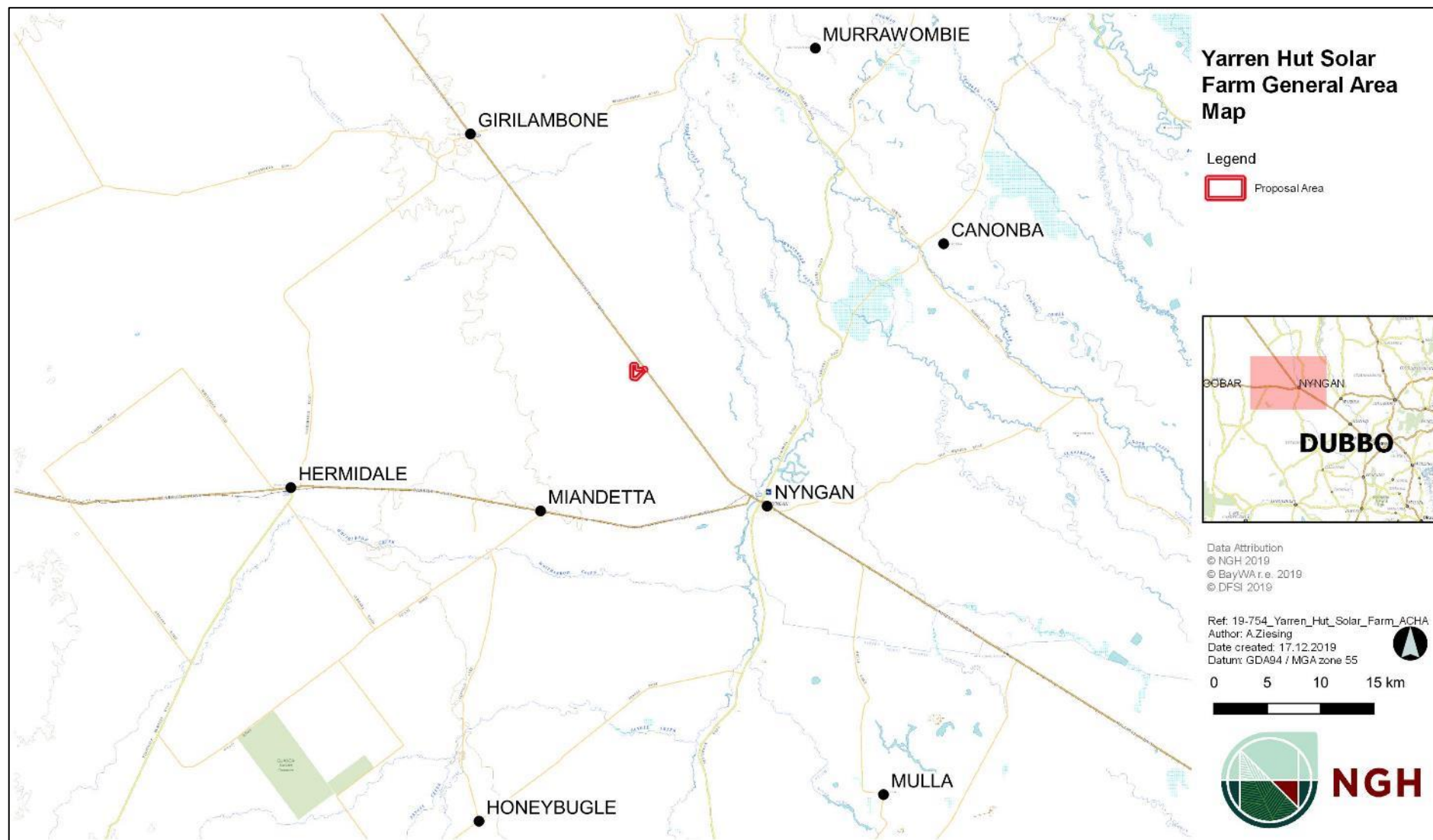


Figure 1-1 Overview Map of the Yarren Hut Solar Farm Proposal Area.

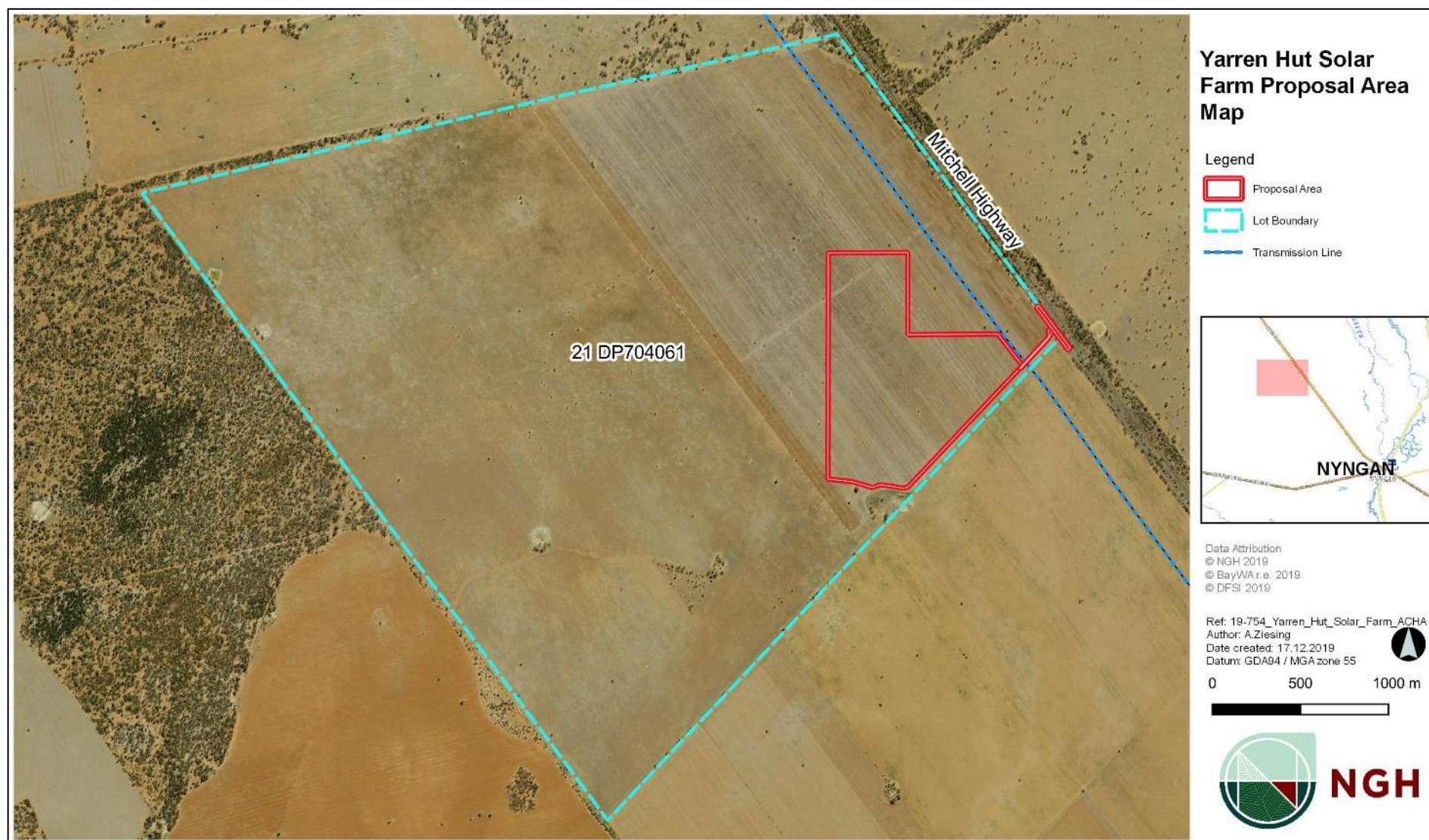


Figure 1-2 Yarren Hut Solar Farm Proposal Area Map.



Figure 1-3 Development Footprint for the Yarren Hut Solar Farm Proposal Area.

1.1. DEVELOPMENT CONTEXT

The development of renewable energy projects is one of the most effective ways to achieve the commitments of Australia and a large number of other nations under the Paris Agreement to reduce greenhouse gas emissions. The Yarren Hut Solar Farm would provide the following benefits:

- Reduction in greenhouse gas emissions from energy generation (when compared with fossil fuel generating sources).
- Provision of embedded electricity generation to supply into the Australian grid close to a main consumption centre.
- Provision of social and economic benefits through the provision of direct employment opportunities.

The establishment of the Yarren Hut Solar Farm would therefore have both local, National and International benefits.

As part of the development impact assessment process, the proposed development application will be assessed under part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The proposed solar farm is classified as “state significant development” (SSD) under Part 4 of the EP&A Act. SSDs are major projects which require approval from the Minister for Planning and Environment. The EIS has been prepared in accordance with the requirements of the Secretary of the Department of Planning and Environment (DPE).

The Secretary of the DPE Environmental Assessment Requirements (SEARs) relating to Aboriginal heritage were as follows:

Heritage – including an assessment of the likely Aboriginal and historic heritage (cultural and archaeological) impacts of the development, including consultation with the local Aboriginal community in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010).

For the purposes of this assessment the proposal area as shown in Figure 1-2 was assessed, in addition to immediately surrounding areas to the north west, and an additional area along the Mitchell Highway, in order to accommodate for any potential requirement for vegetation screening, for example. Note the following definitions used within this report:

- Proposal area – *the area within which the proposed development will occur;*
- Development footprint – *the area within which impact is proposed;*
- Survey area – *the area which was subject to archaeological survey as part of this assessment.*

1.2. PROJECT PROPOSAL

The Yarren Hut Solar Farm proposal area has been selected due to excellent solar exposure, access to major roads and the grid transmission network. The use of the site would be based on a lease agreement between the proponent and the landowner for the life of the project.

The proposal involves the construction of a ground-mounted photovoltaic solar farm which would generate approximately 28 MW alternating current (AC) of renewable energy.

The design of the proposed development is somewhat adaptable and would be refined to avoid adverse impacts where feasible, and to minimise/mitigate environmental impacts if avoidance is not possible. The design would consider the results of consultation with relevant Aboriginal stakeholders, and the ACHA and EIS when prepared.

The proposal would consist of the following components:

- Single-axis tracker photovoltaic solar panels mounted on steel frames (approximately 84,000 PV solar panels).
- Underground electrical conduits and cabling to connect the arrays and the inverters and transformers.

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- Site office, site compound, vehicle parking areas, access tracks and perimeter fencing.
- Site access from the Mitchell Highway.

The proposal is expected to operate for 50 years. The construction phase of the proposal planned to commence in Q3 2021 and would last 6 months. After the initial operating period, the solar farm would either be decommissioned, removing all above-ground infrastructure and returning the site to its existing land capability, or upgraded with new PV equipment. The proposed development has an estimated capital investment cost greater than \$30 million. The proposal is therefore classified as SSD under Part 4 of the EP&A Act.

1.3. PROJECT PERSONNEL

The assessment was undertaken by NGH archaeologist Amy Ziesing, including research, Aboriginal community consultation, GIS mapping and report preparation. Alexandra Byrne undertook the field survey, artefact analysis and assisted in the community consultation. Chelsea Jones assisted with the reporting. Shoshanna Grounds reviewed the report.

Consultation with the Aboriginal community was undertaken following the process outlined in the *Aboriginal cultural heritage consultation requirements for proponents 2010*. Two Aboriginal groups registered their interest in the proposal.

The registered Aboriginal parties were:

- Bogan Aboriginal Corporation; and
- Corroboree Aboriginal Corporation.

Representatives who participated in the survey fieldwork were:

- Lesly Ryan (Representing Bogan Aboriginal Corporation);
- Brendon Weldon (Representing Bogan Aboriginal Corporation and Native Title Claimants); and
- Mike Skinner (Representing Corroboree Aboriginal Corporation).

Further details and an outline of the consultation process is provided in Section 2 and Appendix A.

1.4. REPORT FORMAT

For the purposes of this assessment of the proposed Yarren Hut Solar Farm development, we have prepared the report in line with the following:

- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011);
- *Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales* (OEH 2010a), and
- *Aboriginal cultural heritage consultation requirements for proponents 2010* (ACHCRP) (OEH 2010b) produced by the NSW OEH.

The purpose of this ACHA Report is therefore to provide an assessment of the Aboriginal cultural values associated with the study area and to assess the cultural and scientific significance of any Aboriginal heritage sites.

The objectives of the assessment were to:

- Conduct Aboriginal consultation as specified in clause 60 (formerly 80c) of the *National Parks and Wildlife Regulation 2019*, using the consultation process outlined in the ACHCRP;

- Undertake a field survey program of the proposal area to identify and record any Aboriginal heritage objects;
- Undertake an assessment of the archaeological and cultural values of the proposal area and any Aboriginal sites therein;
- Assess the cultural and scientific significance of any archaeological material, and
- Provide management recommendations for any objects found.

2. ABORIGINAL CONSULTATION PROCESS

The consultation with Aboriginal stakeholders was undertaken in accordance with clause 60 (formerly 80C) of the *National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2019* following the consultation steps outlined in the ACHCRP guide provided by BCD. The guide outlines a four-stage process of consultation as follows:

- Stage 1 – Notification of project proposal and registration of interest.
- Stage 2 – Presentation of information about the proposed project.
- Stage 3 – Gathering information about cultural significance.
- Stage 4 – Review of draft cultural heritage assessment report.

The full list of consultation steps undertaken has been documented in a consultation log, which is provided in Appendix A, along with copies of relevant correspondence with organisations and individuals.

A summary of actions taken in accordance with the ACHCRP guideline is provided below.

Stage 1. Letters outlining the development proposal and the need to carry out an ACHA were sent to the Nyngan LALC and various statutory authorities including BCD (formerly OEH), as identified under the ACHCRP. An advertisement was placed in the local newspaper, the *Nyngan Observer* on 4 December 2019, seeking registrations of interest from Aboriginal people and organisations. A further series of letters were sent to other organisations identified by BCD in correspondence to NGH. In each instance, the closing date for submission was 14 days from receipt of the letter.

As a result of this process, two Aboriginal groups registered their interest in the proposal.

These registered Aboriginal parties were:

- Bogan Aboriginal Corporation; and
- Corroboree Aboriginal Corporation.

No other party registered their interest. However, it is noted that one Native Title Claim is registered over the proposal area: NC2012/001. The Native Title Claim has not yet been determined and the group did not actively register their interest in the project.

Stage 2. On 16 January 2020, an Assessment Methodology document for the project was sent to the two registered Aboriginal parties as listed above. This document provided details of the background to the proposal, a summary of previous archaeological surveys and the proposed heritage assessment and subsurface testing methodology. The document invited comments regarding the proposed methodology and sought any information relating to known Aboriginal cultural significance values associated with the subject area and/or any Aboriginal objects contained therein. A minimum of 28 days was allowed for a response to the document.

No comments were received on the methodology from the two registered parties and both expressed an interest in participating in fieldwork.

Stage 3. The *Assessment Methodology* outlined in Stage 2 included a written request to provide any information that may be relevant to the cultural heritage assessment of the study area. It was noted that sensitive information would be treated as confidential. Responses regarding cultural information were received from members of the Bogan Aboriginal Corporation and Native Title Claimant group (Ngemba, Ngiyampaa, Wangaaypuwan and Wayilwan native title determination application) participating in the fieldwork. This information related to the sites identified within the proposal area and is outlined in Section 2.2.1 below.

At this stage, the fieldwork was organised, and both registered parties were asked to participate in the survey fieldwork, which was completed on Thursday 27 February 2020 by an NGH archaeologist with local Aboriginal representatives.

Representatives who participated in the survey were:

- Lesly Ryan (Representing Bogan Aboriginal Corporation);
- Brendon Weldon (Representing Bogan Aboriginal Corporation and Native Title Claimants); and
- Mike Skinner (Representing Corroboree Aboriginal Corporation).

Stage 4. On 14 May 2020 a draft version of this *Aboriginal Cultural Heritage Assessment Report* for the proposal (this document) was forwarded to the RAPs inviting comment on the results, the significance assessment and the recommendations. A minimum of 28 days was allowed for responses to the document.

2.1. ABORIGINAL COMMUNITY FEEDBACK

2.1.1. Cultural Information Received During Fieldwork

During the fieldwork it was identified by survey participants that a common site type identified in the local area is hearths, which are identified by the presence of burnt clay nodules. While no such sites have previously been recorded in the local area, this type of archaeological resource was recognisable to the sites officers present. Additionally, a number of local plants were identified as sources of bush food and medicine, though none were present within the proposed development footprint.

2.1.2. Fieldwork feedback

Following the fieldwork, a report was received by NGH from Lesly Ryan of the Bogan Aboriginal Corporation regarding the survey, which included an outline of the results as well as indicating that the overall level of sensitivity was considered to be low. It is noted that a number of additional scarred trees were recorded in this report, which were assessed not to be of Aboriginal origin by the NGH archaeologist. These trees are also outside the proposed development footprint. The report provided by Bogan Aboriginal Corporation is included in Appendix C of this report.

2.1.3. Draft ACHA feedback

Community consultation occurred throughout the project. The draft report was provided to each of the RAPs and feedback was sought on the recommendations, the assessment and any other issues that arose.

No comments on the draft ACHA were received.

3. BACKGROUND INFORMATION

3.1. REVIEW OF LANDSCAPE CONTEXT

3.1.1. Geology, Topography and Climate

The landscape context assessment is based on a number of classifications that have been made at national and regional level for Australia. The national Interim Biogeographic Regionalisation for Australia (IBRA) system identifies the proposal area as located within the Cobar Peneplain of south eastern Australia (DE&E 2016).

The Cobar Peneplain Bioregion is a low undulating plain punctuated by stony ridges and ranges formed as a north western extension of the Lachlan Fold Belt. Rock outcrops form low ranges with those in the east of the peneplain being older (Ordovician) than those in the west (Devonian). Topography around Cobar is more subdued as residual hills, low rounded ridges and stony slopes formed on shales, phyllites and cherts (OEI 2016). Wide short valleys connect to Lachlan floodplains.

The bioregion is bounded to the north and east by the Darling Riverine Plains Bioregion, to the east by the South Western Slopes Bioregion, and by the Riverina and Murray Darling Depression Bioregions to the south and west. The north western part of the Cobar Peneplain Bioregion falls in the Western Division.

The Cobar Peneplain Bioregion encompasses the townships of Cobar, Nymagee, Byrock, Girilambone, Lake Cargelligo and Rankins Springs with Louth and Tottenham lying at its boundary. Bourke lies just outside the northern boundary and West Wyalong lies just outside the eastern boundary of the bioregion. The bioregion has a total area of 7,334,664 hectares and occupies 9.2 per cent of the state.

In the north of the bioregion, Yanda Creek, a major stream, discharges directly into the Darling River which meanders across the bioregional boundary in the northwest. In the east, several small streams flow occasionally into the Bogan River as it criss-crosses the eastern boundary of the bioregion (Morgan and Terrey 1992).

The Lachlan River traverses the bioregion in the south with contributions of minor runoff from smaller stream (Morgan and Terrey 2002). The bioregion lies wholly within the Murray-Darling Basin and includes the Barwon, Macquarie, Yanda, Darling, Lachlan and Murrumbidgee catchments. The geology is comprised of Devonian quartz sandstone and conglomerate, small areas of granite, and Quaternary colluvial slope mantles and alluvium.

The proposal area sits within one Mitchell landscape: Pangee Alluvial Plains (Pap) (DECC 2002). This Mitchell Landscape description is provided in Table 1 below. The topography recorded for the Nyngan region consists of undulating plains with residual low hills, wide short valleys and a lack of surface water. (OEI 2016).

Interim Biogeographic Regionalisation for Australia

The national IBRA system identifies the proposal area as being located in the Cobar Peneplain (NSS) which is split into five subregions, the Boorindal Plains (COP01), the Barnato Downs (COP02), the Canbelego Downs (COP03), the Nymagee Downs (COP04) and the Lachlan Plains (COP05), outlined in Table 1 (DEE 2016). The proposal area is located within the Canbelego Downs subregion.

Table 3-1 Cobar Peneplain complex subregions after Morgan and Terry (1992).

Bioregion - Subregion	Geology	Landforms	Soils
Canbelego Downs	Fine grained Ordovician and Silurian metasedimentary and sedimentary rocks, such as phyllite, slate and chert.	Undulating plateau with low stony ridges and stony rises, relief to 20m. Long low angle slopes and wide (>500m) valleys. Some central sandy channels, a few swamps.	Shallow red loams or stony loams on crests merging to red earths on slopes, plains and through the valley floors. Minor sand deposits along streams, yellow texture contrast soils in swamps.
Boorindal Plains	Quaternary alluvial blanket over weathered Ordovician and Silurian low grade metamorphosed sedimentary rocks, such as phyllite.	Undulating plains with wide valleys and occasional low stony rises. Gilgai widespread in depressions and swamps.	Red earths and red texture contrast soils with stony lag gravels on slopes. Brown clays and harsh texture contrast soils in depressions and swamps.
Barnato Downs	Devonian quartzose sandstones in ridges, finer sedimentary rocks under the plains often covered by a mantle of Quaternary alluvium.	Steep ridges and rocky slopes controlled by bedding and joints in bedrock. Relief to 150m, length of ranges up to 40 km. Undulating low ridges and stony rises on softer rocks with a mantle of Quaternary colluvium and alluvium. Sands and minor clay deposits in stream lines. Lakes at Barnato.	Thin, discontinuous stony profiles on ridges, thickening downslope to stony, red, texture contrast soils and red earths on the plains. Valleys generally texture contrast soils with calcium carbonate in subsoil, small areas of cracking brown clays or red sands.
Nymagee Downs	Ordovician to Devonian granites, quartzose sandstones, phyllites, slates and acid volcanics. Quaternary aeolian sands and alluvium.	Low hills and ridges with steep slopes. Form controlled by rock type, rounded hills with tors on granite, asymmetric strike ridges in sedimentary rocks. Sandplains from adjacent bioregions lap onto lower slopes.	Gritty red and yellow earthy sands on granite. Stony red earths and texture contrast soils on sedimentary rocks. Calcareous red earths in sandplains, minor earths and grey clays in alluvium.
Lachlan Plains	Devonian quartz sandstone and conglomerate, small areas of granite, and Quaternary colluvial slope mantles and alluvium.	Strike ridges of resistant rocks often following fold patterns. Low rounded hills of granite with sparse outcrop. Wide short valleys connecting to Lachlan floodplains.	Shallow stony or gritty red earths on crests and slopes, thickening downslope as rubbly mantles often with a texture contrast. Deep sandy alluvial soils in valleys with small areas of grey clay in swamps.

Mitchell Landscapes and Soils

The Mitchell landscape (2002) mapping of the proposal area is covered by only one landscape type. This landscape is the Pangee Alluvial Plains (Pap). A description of this landscape has been provided in Table 2 below. The Mitchell landscapes provide more specific landform, soil and vegetation profiles for this landscape area.

No soil mapping has been completed for the Nyngan region, therefore, descriptions of the soils in the current assessment area have been taken from the Mitchell Landscape and IBRA subregion. Based on this, it is expected that shallow red loams or stony loams will be present on plains.

Table 3-2 Description of the Mitchell Landscape within the proposal area (DECC 2002).

<i>Mitchell Landscape</i>	<i>Landforms</i>	<i>Soils</i>	<i>Vegetation</i>
Pangee Alluvial Plains Landscape Code: Pap Ecosystem Meso grouping: CP Nymagee	Extensive plains of Quaternary alluvium draining from undulating country on the eastern edge of the Cobar peneplain, relief to 3m.	Deep calcareous red earths with hardpan at depth.	Scattered bumble box (<i>Eucalyptus populnea</i>), white cypress pine (<i>Callitris glaucophylla</i>), warrior bush (<i>Apophyllum anomalum</i>), budda (<i>Eremophila mitchellii</i>), wire grass (<i>Aristida</i> sp.), umbrella grass (<i>Digitaria</i> sp.), windmill grass (<i>Chloris truncata</i>), variable spear grass (<i>Austrotipa variabilis</i>), other grasses and forbs. Through-running creeks with incised channels and flats with dense bumble box or river red gum (<i>Eucalyptus camaldulensis</i>), sedges and grasses. Scattered small swamps with yellowish texture-contrast soils.

3.1.2. Hydrology

Bogan LGA is part of the Cobar Peneplain Bioregion, Canbelego Downs subregion. The Cobar Peneplain lies within Australia's hot, persistently dry semi-arid climatic zone. Patches of sub-humid climate exist on the south eastern boundary of the bioregion and, in the south, these areas are characterised by a hot summer and the absence of a proper dry season (OEH 2016).

The BOM (2020) climate records available from the nearest climate station at Nyngan Airport (station no. 051039, approximately 17 km southeast of the proposal) indicate a mean summer maximum of 34.4°C (January) and a mean winter minimum of 3.8°C (July) (**Error! Reference source not found.**). Rainfall records from the same station show a mean annual rainfall of 445.6 mm, and that rainfall is generally greatest over summer, with the average monthly maximum occurring in January (51.2 mm).

The closest natural watercourse, the Bogan River, lies approximately 8.6 km east of the current assessment area. Three first-order ephemeral drainage lines are located approximately 5 to 9 km west of the proposed solar farm, but these have been truncated by historical developments.

There are no farm dams present in the proposal area; however, six exist in the wider lot boundary. Generally, surface water is scarce in the proposal area.

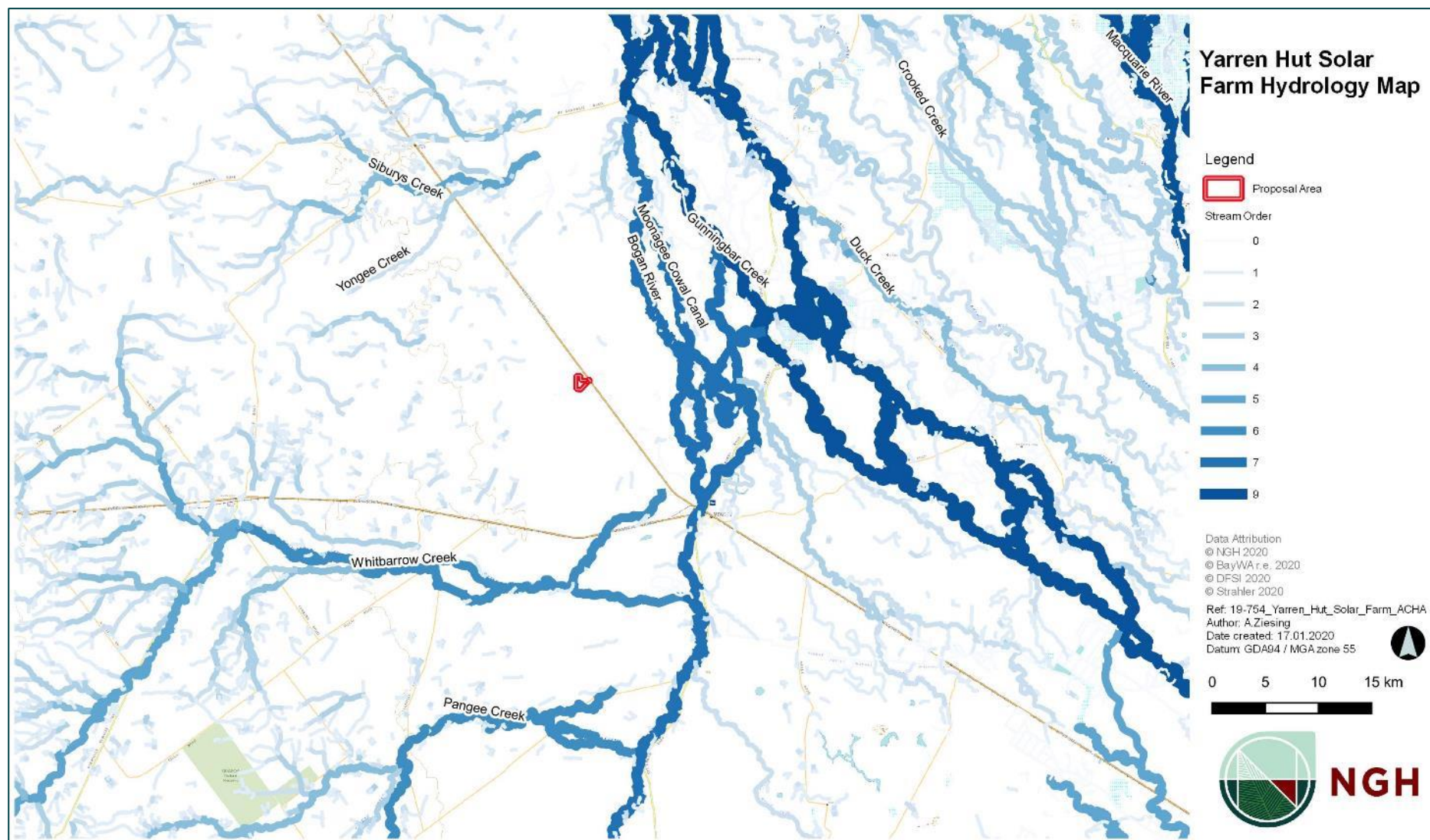


Figure 3-1 Hydrology map of the Yarren Hut Solar Farm proposal area.

3.1.3. Flora and Fauna

The character of the native vegetation depends to a great extent on the underlying soils and topography. The original composition of the vegetation has been significantly altered by clearing and the introduction of other species.

Where scattered paddock trees do remain they consist of bumble box (*Eucalyptus populnea*), white cypress pine (*Callitris glaucophylla*), warrior bush (*Apophyllum anomalum*), budda (*Eremophila mitchellii*), wire grass (*Aristida* sp.), umbrella grass (*Digitaria* sp.), windmill grass (*Chloris truncata*), variable spear grass (*Austrostipa variabilis*), other grasses and forbs.

Some native fauna species found within the Nyngan area include the Australian Bustard (*Ardeotis australis*), Brolga (*Grus rubicunda*), Malleefowl (*Leipoa ocellata*), Western Blue-tongue lizard (*Tiliqua occipitalis*) and the Yellow-bellied Sheath-tail-bat (*Saccolaimus flaviventris*).

Prior to the land clearance and removal of native vegetation, the woodlands would likely have formed habitat a variety of animals including ground-dwelling and arboreal marsupials such as macropods, possums, gliders, wombats, echidnas; birds; lizards, such as goannas; and snakes. These animals were important to past Aboriginal people as they were valuable as a source of food, as well as being resources for clothing (fur) and implements (bone).

3.1.4. Historic Land Use and Disturbance

The proposal area has a history of intensive agricultural and pastoral use. The majority of the area has been utilised for grazing and crop production since European settlement in the mid-1800s.

The Mitchell Highway, originally known as State Highway no. 7, was declared on 8 August 1928 and named the North Western Highway. The name was later changed to the Mitchell Highway on 9 October 1936, to honour Surveyor-General Thomas Livingstone Mitchell, who explored the region in 1845. By mid-1958 the highway had been bituminised to Nyngan, but this did not extend to the current assessment area until 1966. The highway has been extensively damaged by flooding of the Bogan and Macquarie Rivers, which occurred at Nyngan in the 1990s.

The Main Western Line, which lies to the immediate north east of the Mitchell Highway was the original western trunk line, starting from Sydney and extending to Bourke. Despite its name, it never reached the border. In 1989, the Bogan River at Nyngan flooded, damaging the line there. In addition, part of the line was blown up by the army to relieve the floodwaters. The line was never repaired.

Localised areas of disturbance have resulted from the installation of a farm dam, troughs, paddock fencing and vehicle access tracks across the site.

3.1.5. Landscape Context

Most archaeological surveys are conducted in a situation where there is topographic variation, and this can lead to differences in the assessment of archaeological potential and site modelling for the location of Aboriginal archaeological sites. As already noted, no ephemeral drainage lines intersect the proposal area which is located on flat plains.

Locations in close proximity to a water source, on level or gently sloping elevated landforms tend to have been favoured for occupation by past Aboriginal people in the area.

As such, lack of landform units and water sources in the proposal area suggest that the current assessment area may still have been used in a transitory way by people when travelling through the wider landscape, resulting in low levels of artefact discard. Any areas of remnant old growth trees are considered to potentially contain evidence of cultural modification; however, the desktop assessment suggests that the proposal area has been extensively cleared of native vegetation with only scattered paddock trees remaining and higher

densities present along the Mitchell Highway. It is also considered unlikely that areas of potential archaeological deposit (PAD) will be present in the current assessment area which comprises low-lying, flat land with shallow, highly disturbed soils and is not associated with any permanent or ephemeral watercourses.

The different soil and Mitchell landscapes noted above were not readily identifiable within the proposal area and were therefore not used as a means of landscape differentiation. There were no distinguishable landforms noted within topographic mapping of the proposal area and therefore landscape mapping to assist in targeted survey was not possible. However, the proposal area, and specifically the development footprint, was found to be on disturbed land which has been subject to significant soil movement as a result of agricultural cropping and occasional large flood events such as that which occurred in the 1990s.

3.2. REVIEW OF ABORIGINAL ARCHAEOLOGICAL CONTEXT

3.2.1. Ethnohistoric Setting

Cultural areas are difficult to define and “must encompass an area in which the inhabitants have cultural ties, that is, closely related ways of life as reflected in shared meanings, social practices and interactions” (Egloff *et al.* 2005:8). Depending on the culture defining criteria chosen - i.e. which cultural traits and the temporal context (historical or contemporary) - the definition of the spatial boundary may vary. In Australia, Aboriginal “marriage networks, ceremonial interaction and language have been central to the constitution of regional cultural groupings” with the distribution of language speakers being the main determinate of groupings larger than a foraging band (Egloff *et al.* 2005:8 & 16).

Historically linguistic anthropologists have placed the Nyngan area within the boundaries of the Wiradjuri language group (Howitt 1996, Tindale 1974, MacDonald 1983, Horton 1994). However, these assertions of boundaries are seen as flawed amongst the local Aboriginal people.

According to Horton (1994), the township of Nyngan sits at the corner of three language group boundaries: Wiradjuri, to the south, Wailwan to the north east and Wongaibon to the north west. These language groups comprise an assemblage of many small clans and bands speaking similar dialects. The borders were, however, not static, they were most likely fluid, expanding and contracting over time to the movements of smaller family or clan groups. Boundaries ebbed and flowed through contact with neighbours, the seasons and periods of drought and abundance.

It was the small family group that was at the core of Aboriginal society and the basis for their hunting and gathering life. The immediate family camped, sourced food, made shelter and performed daily rituals together. The archaeological manifestations of these activities are likely to be small campsites, characterised by small artefact scatters and hearths across the landscape. Places that were visited more frequently would develop into larger site complexes with higher numbers of artefacts and possibly more diverse archaeological evidence.

These small family units were part of a larger band which comprised a number of families. They moved within an area defined by their particular religious sites. Such groups might come together on special occasions such as pre-ordained times for ceremonies, rituals or simply if their paths happened to cross. They may also have joined together at particular times of the year and at certain places where resources were known to be abundant. The archaeological legacy of these gatherings would be larger sites rather than small family camps. They may include large hearth or oven complexes, contain a number of grinding implements and a larger range of stone tools and raw materials.

Identification and differentiation of such sites are difficult in the field. A family group and their antecedents and descendants occupying a particular campsite repeatedly over a long period of time may leave a similar pattern of archaeological signatures as a large group camped over a shorter period of time.

European settlers started arriving in the district in the 1830s, after the explorer Oxley passed through the region in 1817. Charles Sturt also passed through the region in 1828. At this point the Aboriginal population in most parts of NSW was in decline, due to disease such as smallpox and influenza as well as dispossession from traditional lands. Acts of violence against Aboriginal people meant there was great social upheaval and partial disintegration of the traditional way of life. This meant that access to traditional resource gathering and hunting areas, religious life and marriage links and access to sacred ceremonial sites were disrupted or destroyed. From 1835, Mitchell led his party along the Bogan River, stopping in *Nyngan*. In 1883 the railway line from Dubbo to Nyngan was completed with Nyngan proclaimed a town in 1891.

However, despite these disruptions, Aboriginal people continued to maintain their connections to sites and the land in the early days of European settlement. Where Aboriginal people were taken to missions, people were able to maintain at least some form of association with country and tell traditional stories. The Ngiyampaa Wayilwan people continue to have a strong connection to their land.

Like everywhere in Australia, Ngiyampaa Wayilwan people were adept at identifying and utilising resources either on a seasonal basis or all year round. Terrestrial animals such as the possum was noted by many early observers as a prime food source and the skins were made into fine cloaks that evidently were very warm (Evans 1815, Oxley 1820, Mitchell 1839). Kangaroos were also eaten, and their skins made into cloaks as well. A range of reptiles and other mammals were also food sources. Fish and mussels would have been prevalent from the rivers and creeks. Insects were also a common food type; in particular grubs, ants and ant eggs (Pearson 1981, Fraser 1892). Birds including emus were common as a food source, often being caught in nets made from fibres of various plants such as flax, rushes and kurrajong trees. Bird hunts were also often undertaken as group activities, with emus, ducks and other birds targeted through groups of people flushing them out and driving them into pre-arranged nets (Ramson 1983).

Plant foods were equally as important and mostly consisted of roots and tubers, such as *Typha* or Cumbungi whose tubers were eaten in late summer and shoots in early spring. Other edible plants from the region include the Yam Daisy, eaten in summer and autumn, the Kurrajong seeds and roots, Acacia seeds and other rushes too (Gott 1982).

Some of the early settlers and pastoralists, surveyors, explorers, administrators and others observed traditional Aboriginal activities, including ceremonies, burial practices and general way of living, and recorded these in letters, journals and books. These early records of Aboriginal lifestyle and society within the region assist in understanding parts of the traditional Aboriginal way of life, albeit already heavily disrupted at the time of the observations and through the eyes of largely ignorant and uninformed observers.

The early observations also note that some weapons and tools were carried, some made from wood such as spears, spear throwers, clubs, shields, boomerangs, digging sticks, bark vessels and canoes. Other materials were observed in use such as stone axes, shell and stone scrapers and bone needles.

In an archaeological context, few of these items would survive, particularly in an open site context. Anything made from bark and timber and animal skins would decay quickly in an open environment. However, other items, in particular those made of stone would survive where they were made, placed or dropped. Shell material may also survive in an archaeological context. Sources of raw materials, such as the extraction of wood or bark would leave scars on the trees that are archaeologically visible, although few trees of sufficient age survive in the modern context. Outcropping stone sources also provide clues to their utilisation through flaking, although pebble beds may also provide sources of stone which leave no archaeological trace.

3.3. AHIMS SEARCH

A search of relevant heritage registers for Aboriginal sites and places provides an indication of the presence of previously recorded sites. It is to be noted that a register search is not conclusive, as it reflects only those areas that have been surveyed and that sites recorded are added to the register.

As a starting point the search will indicate whether any sites are known within or adjacent to the investigation area. The Aboriginal Heritage Information Management System (AHIMS) provides a database of Aboriginal heritage sites previously registered within an area. The results of the search are valid for 12 months for the purposes of a heritage assessment.

On 17 December 2019 a search of the AHIMS database was undertaken over an area of approximately 20 km x 20 km centred over the proposal area (from latitude -31.5879, longitude 146.8862 to latitude -31.3267, longitude 147.2156 with a buffer of 200 m). The AHIMS Client Service Number was 473364. There were 28 Aboriginal sites recorded within this search area and no declared Aboriginal Places. Table 4-1 below shows the breakdown of the site types and Figure 4-1 shows the extent of the search area in relation to the proposed solar farm site.

Table 3-3. Breakdown of previously recorded Aboriginal sites within 20 km of the proposal area

Site Type	Number
Modified Tree (Carved or Scarred)	17
Artefact	10
Ceremonial Ring (Stone or Earth); Modified Tree (Carved or Scarred)	1
TOTAL	28

Based upon these search results the main site type in this area are modified trees (carved or scarred (60.7%), followed by artefact sites (35.7%), and a ceremonial bora ring with a carved tree (3.6%). No sites fall within the current assessment area and the closest known sites are over 12 km from the proposed solar farm boundary. These include a modified tree on the Mitchell Highway (AHIMS# 26-3-0002), a ceremonial bora ring and carved tree on the Bogan River (AHIMS# 27-1-0003) and two artefact sites (AHIMS# 27-4-0247 and 27-4-0248) to the west of Nyngan. All other remaining sites within the 20 km search area are centred around Nyngan and have been identified based on targeted surveys for proposed development.

None of these registered sites will be impacted by the proposed Yarren Hut Solar Farm development.

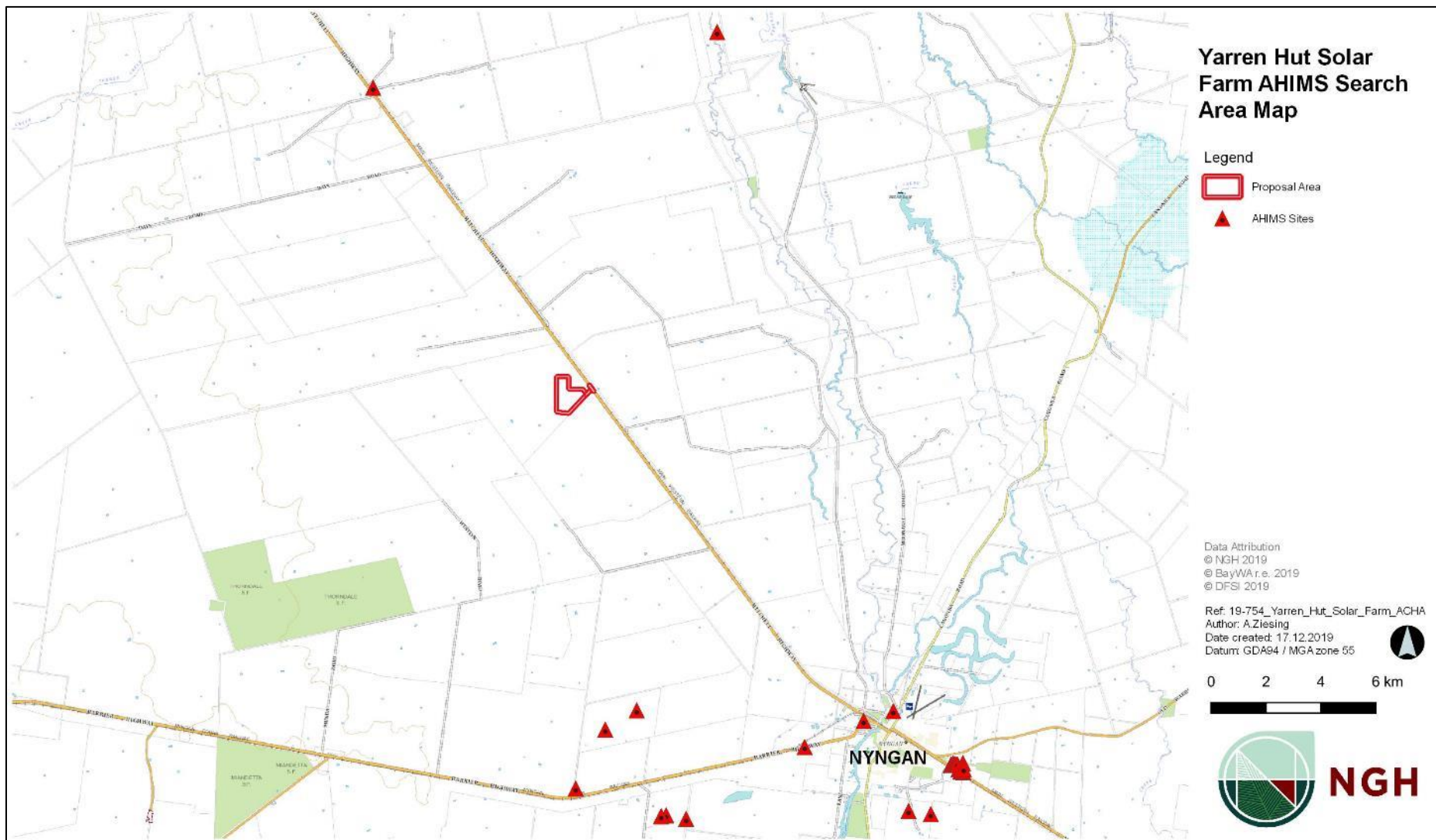


Figure 3-2 AHIMS Sites within a 20 km radius of the Yarren Hut proposal area.

3.4. REGIONAL ARCHAEOLOGICAL STUDIES

Aboriginal people have occupied what we now know as the Australian continent for at least 40,000 years and perhaps 60,000 years and beyond (Mulvaney and Kamminga 1999, Hiscock 2007). No regional synthesis of the archaeology has been completed for the Bogan Shire region, but several archaeological surveys have been completed for the Nyngan area. The following are summaries of those archaeological survey reports that have been completed in the wider Orana region, as well as locally to Nyngan. It should be noted that such studies are primarily driven by development and infrastructure requirements and therefore there are often a number of biases associated with the information provided.

Pearson (1981) completed an archaeological investigation of the upper Macquarie for his PhD, covering an expansive area to the east of the current assessment area containing mountainous landforms. The study included research of historical sources and ethnographic information. Additionally, three rock shelters were excavated, and comparative analysis was undertaken of this data against other known archaeological sites in the area (as cited in Dibden 2012). Pearson highlighted patterns of Aboriginal occupation through analysis of 40 artefact scatters and four sample locations. These were grouped into occupation sites and non-occupation sites, including scarred or carved trees, ceremonial sites, grinding grooves and burial sites. The following site prediction model was developed based on the analysis:

- The distance of sites from water ranged from 10 to 500 m, with larger sites being located closer to water sources;
- Site location was dependent on good soil drainage, views overlooking watercourses, level ground, shelter and elevation above cold air;
- Most sites were identified in places originally containing open woodlands to provide a fuel source;
- Burial sites and grinding grooves were situated close to habitation areas, but in areas of sufficient soil depth and penetrability (burials) and where suitable outcropping sandstone occurred (grinding grooves);
- Ceremonial sites such as earth rings were situated away from campsites;
- Stone arrangements were also located away from campsites, in isolated places, and were more likely to be located on small hills or knolls, although they can also occur on flat land;
- Scarred or carved trees were distributed with no obvious patterning other than their proximity to watercourses, and in frequent camping locations;
- Quarry sites were located where known outcrops of suitable raw material were available; and
- Aboriginal campsites were rarely used for longer than three nights. If sites contained extensive archaeological deposit, Pearson suggested they probably resulted from a series of short visits over time (as cited in Dibden 2012).

Koettig (1985) undertook a comprehensive study relating to Aboriginal occupation of the Dubbo area, which although located 170 km south east of the current assessment area provides general information for the wider region in relation to site type, location and associated environmental setting. Koettig surveyed a variety of landform units and stream orders within three geographic zones and proposed that:

- Aboriginal sites will be distributed throughout all landscape units with artefact scatters and scarred or carved trees being the most common site types; and
- The size of a site and its location is predominantly determined by environmental and social influences, which for the latter can often not be predicted. Koettig produced modelling of site type and site location in relation to environmental factors, including:
 - *Proximity to water*: despite sites being identified in a variety of landforms, including hills and ridges distant from water, the most extensive and complex sites were located close to permanent water.

- *Availability of food resources:* The most abundant and varied food resources were identified along major watercourses, resulting in larger campsites, but seasonal food resources were also noted distant to permanent water.
- *Geological formation:* Certain site types occur in particular geological settings. Grinding grooves are located where there are suitable sandstone outcrops, while quarries are found where there is a useable and accessible stone resource. Burials are most likely to be found in sandy deposits such as those that exist on alluvial flats (as cited in Dibden 2012).

Smith (1988) completed an archaeological survey for the proposed 132kV transmission line from Dubbo to Nyngan. The entire 168 km length of proposed transmission line and 45 m easement width was surveyed for Aboriginal and historic sites. A total of 20 Aboriginal sites were identified across the survey area. The sites include 13 artefact scatters and one scarred tree, as well as six isolated finds. Four previously recorded sites were also reinspected to ensure that they were not to be impacted by the proposed development. All isolated find sites were outside of the proposed easement; however, nine of the artefact scatters lay either wholly or partially within the development area. It was recommended that the power poles not be erected within 50 m of the site boundaries. Avoidance and demarcation of the scarred tree site was also recommended to prevent inadvertent clearing.

Kelton (1995) completed an archaeological survey for the proposed North Copper Mine near Girilambone, approximately 26 km north east of the current assessment area. A previous investigation over part of the Copper Mine was completed by Nicholson (1989), recording one scarred tree and two isolated finds. The scarred tree was identified along the Mitchell Highway and the two isolated artefacts were found adjacent to ephemeral creeklines. A systematic survey was also completed by Nicholson (1990) for the proposed water pipeline corridor connecting the Copper Mine site to the Bogan River. A further five artefact scatters were identified along the banks of the river and on the eastern side of the mine prospect at the location of three proposed settling ponds, which were associated with an ephemeral watercourse. The highest artefact densities recorded by Nicholson were at the Bogan River sites. When Kelton completed the survey in 1994, the subject site was divided into areas of high impact (Area A) and nil to low impact (Area B). All areas were surveyed however wider transects were employed across land designated to have lower impact from the proposed mine expansion. Following the completion of the survey, the size of both areas was significantly reduced. Three landform units were identified by Kelton and each was assigned a predicted archaeological sensitivity. These micro land systems included lower flat areas located around drainage soaks and lower sections of ephemeral creeks; and higher relief areas between ephemeral creeks and broad drainage systems, both of which were assigned moderate archaeological sensitivity. Rocky, gravelly high ridges and peaks were also designated as a landform unit, but these areas were assigned low archaeological sensitivity. A total of 34 hearths, 27 scarred trees (including two possible carved trees) one artefact scatter and four isolated finds were identified during the field survey. Out of these 66 sites, 59 were to be impacted by the proposed mine expansion works.

Gaynor (2000) completed an archaeological survey for a proposed railway goods yard in the centre of Nyngan. No Aboriginal sites were identified during the survey, although two plant species utilised by Aboriginal people in the past were noted, including Nardoo plants and Kurrajong trees; however, none of this vegetation exhibited evidence of cultural modification.

Purcell (2010) conducted a desktop assessment of two alternative locations for solar farms at Nyngan. The Bogan riverine landscape was identified as containing a number of landform categories frequently associated with Aboriginal occupation. These features include relic drainage lines and tributaries which occur on the floodplain away from the main river channel (as cited in Dibden 2012).

Dibden (2010) assessed a solar project situated immediately east of Nyngan. Two isolated artefacts were recorded during the survey. The artefact density and archaeological significance of the sites was assessed as very low.

Dibden (2012) completed an ACHA for the proposed Nyngan Solar Plant approximately 10 km west of Nyngan and 12 km south of the current assessment area. Three isolated artefacts (Coreen SU1/L1, Coreen SU1/L2 and Coreen SU2/L1) were identified in eroded ground exposures during the survey, which maintained moderate to high effective survey coverage throughout. This resulted in Dibden assessing the proposal area as having low archaeological status and potential. Undetected and subsurface stone artefacts were also predicted to be present across the site, but in extremely low densities.

Artefact Heritage Services (2016) completed an Aboriginal and historic heritage assessment for a proposed open cut scandium mine, including Tailings Storage Facility (TSF), a Waste Rock Emplacement and processing plant, approximately 17 km west of Nyngan. No Aboriginal sites or areas of archaeological potential were identified during this investigation and the site was assessed as being of low potential.

Wilcox (2015) completed an Aboriginal and historical due diligence assessment for the proposed Off-Steam Water Storage facility in Nyngan. These works were proposed in order to improve the security of Cobar's water supply. Two scarred trees were recorded in association with the proposed Site 5 storage ponds. Two historic survey marker trees were also identified within the proposed Site 5 pipeline alignment. It was recommended that Site 1 be the preferred location for the proposed works as this location presented the fewest heritage constraints. If this could not be achieved, then avoidance and demarcation of the scarred tree sites was recommended.

3.4.1. Summary of Aboriginal Land Use

The results of the previous archaeological studies indicate that, while some areas were found to contain significant Aboriginal sites such as scarred trees or high-density artefact scatters, these were generally located within close proximity to the Bogan River or its high order tributaries. Furthermore, significant and regionally rare sites such as rock shelters, quarries and grinding grooves are only found where suitable geological formations are present. Studies which have been undertaken in similar landscapes to the current proposal area, including those located more than several kilometres from a permanent water source, have identified limited evidence of land use or occupation by past Aboriginal people. This is likely due to the absence of potable water and associated resources required for food, medicine and implement production.

The current assessment area may still have been used in a transitory way by people when travelling through the wider landscape, resulting in low levels of artefact discard. Any areas of remnant old growth trees are considered to potentially contain evidence of cultural modification; however, the desktop assessment suggests that the proposal area has been extensively cleared of native vegetation with only scattered paddock trees remaining and higher densities present along the Mitchell Highway. It is also considered unlikely that areas of potential archaeological deposit (PAD) will be present in the current assessment area which comprises low-lying, flat land with shallow, highly disturbed soils and is not associated with any permanent or ephemeral watercourses.

3.5. ARCHAEOLOGICAL SITE LOCATION MODEL

The Aboriginal site modelling for the region to date suggests that there is a strong association between the presence of potential resources for Aboriginal use and the presence of archaeological sites. Areas directly associated with water and or elevated ground appear to have the greatest potential for identification of Aboriginal cultural material. There are exceptions to this however, and relatively low-lying floodplain areas also have potential for the identification of isolated artefacts or campsites.

Based on the results of these previous archaeological investigations in the local Nyngan area, and through extrapolation of Wiradjuri sites from other areas within close proximity of Nyngan, it is possible to provide the following model of site location in relation to the proposed solar farm area.

Isolated Artefacts – are present across the entire landscape, in varying densities. As Aboriginal people traversed the entire landscape for thousands of years, such finds can occur anywhere and indicate the

presence of isolated activity, dropped or discarded artefacts from hunting or gathering expeditions or the ephemeral presence of short-term camps. This feature is known to occur as located in proposal area during due diligence assessment.

Stone artefact scatters – representing camp sites that can occur across the landscape, usually in association with some form of resource or landscape unit. Within the proposal area, there are no water sources, therefore, this site is unlikely to occur.

Stone resources – are areas where people used natural stone resources as a source material for flaking. This requires geologically suitable material outcropping so as to be accessible. The proposal area contains no natural outcropping stone, therefore this site is unlikely to occur.

Scarred Trees – these require the presence of mature trees and are likely to be concentrated along major waterways and around swamps areas. There are scattered paddock trees within and adjacent to the proposal area however extensive historical clearing of tall woodland has occurred. Some registered scarred trees have been recorded along the Mitchell Highway, suggesting that this feature may occur if trees of a suitable age remain standing.

Hearths/Ovens – are identified by burnt clay used for heat retainers. Some are recorded in the district in association with resource locations. However, they could occur either independently or in association with other Aboriginal cultural features such as artefact scatters. Hearths are generally considered to be limited, one-off use sites, or reused only a few times, and are characterised by smaller concentrations of burnt clay. Ovens are considered to represent larger features, often extending over an extended area and can include other material such as bone. No such sites have been recorded in the area and therefore this site type is considered unlikely to occur.

Mounds – are accumulations of heat retainer ovens that have built up over time. They are typically round or oval in shape and range in length from just a few metres to over 100 m and in height from 0.1 m to 2 m. They are identified by the presence of baked clay heat retainers, which have usually been brought to the location from a nearby source of natural clay such as a lakebed, swamp or drainage line. Mounds are generally found in proximity to wetland areas such as lakes, swamps and creeks, often elevated above these areas by being situated on sandy rises, lunettes, source bordering dunes and palaeochannels. Mounds are likely to contain a range of other archaeological features such as bone, shell, stone artefacts and burials. No such sites have been recorded in the area and therefore this site type is considered unlikely to occur.

Burials – are generally found in elevated sandy contexts or in association with rivers and major creeks. No such features exist with the proposal area and therefore such sites are unlikely to occur.

Shell Middens – are the agglomeration of shell material disposed of after consumption. Such places are found along the edges of significant waterways, swamps and billabongs. Given that there are no significant waterways, swamps and billabongs in the proposal area it is unlikely that this feature will occur.

In summary, the lack of topographic, environmental or landscape features within the proposal area means that there are few loci that could have potentially been attractive to Aboriginal people to concentrate activity and therefore have a better chance of leaving archaeological traces. Nonetheless, given that Aboriginal people have lived in the region for tens of thousands of years, there is some potential for archaeological evidence to occur across the proposal area. This is most likely to be in the form of stone artefacts and scarred trees.

3.6. COMMENT ON EXISTING INFORMATION

The AHIMS database is a record of those places that have been identified and had site cards submitted to the AHIMS database. It is not a comprehensive list of all places in NSW as site identification relies on an area being surveyed and on the submission of site forms to AHIMS. There are likely to be many areas within NSW that have yet to be surveyed and therefore have no sites recorded. However, this does not mean that sites are not present.

Within the Nyngan district there have only been a few archaeological investigations. The information relating to site patterns, their age and geomorphic context is little understood.

The robustness of the AHIMS survey results as a tool to provide data to model predictive assessment on is therefore considered to be only moderate for the present investigation. There are likely to be many sites that exist that have yet to be identified. In particular, the prevalence of scarred trees in the AHIMS database is more likely to be a reflection of the obtrusiveness of trees and it can be assumed that artefacts would also be present across the landscape but have yet to be found and recorded.

With regard to the limitations of the information available, archaeologists rely on Aboriginal parties to divulge information about places with cultural or spiritual significance in situations where non archaeological sites may be threatened by development. To date, no such places have been identified within the archaeological reports carried out within the broader Bogan Shire area. No such places have been identified through the consultation process for the Yarren Hut Solar Farm proposal area.

4. ARCHAEOLOGICAL INVESTIGATION RESULTS

4.1. SURVEY STRATEGY

The survey strategy was to cover as much of the ground surface as possible within the Proposal area. The survey also covered some portions of the land parcel outside the proposal area, in order to accommodate any minor changes to the development footprint, and to cover implementation of tree screening along the Mitchell Highway, if required. The survey undertaken for the purposes of this report was conducted on Thursday 27 February 2020 by NGH archaeologist Ali Byrne, RAP representatives Lesly Ryan and Brendon Weldon of Bogan Aboriginal Corporation and Mike Skinner of Corroboree Aboriginal Corporation. The survey involved walking in transects across the majority of the proposal area development footprint, with specific areas targeted where the potential for Aboriginal objects to be present was considered to be higher in relative terms, specifically areas where ploughing has not occurred and disturbance was therefore lower. Vehicle survey was undertaken in low sensitivity areas and outside the proposed footprint area for the development. Visibility within the proposal area was extremely high, generally between 80 and 90% as a result of the clearance of native vegetation historically, and current absence of crops within the ploughed field. Vegetation was limited to very sparsely scattered trees across the proposal area, with denser stands of trees along the road verge of Mitchell Highway. These include some mature box tree, as well as a number of smaller species such as tea tree.

The team were able to walk at a similar pace allowing for maximum survey coverage and maximum opportunity to identify any heritage features. Areas of remnant vegetation within the proposal area were also inspected for any evidence of Aboriginal scarring (Long 2005). NGH believes that the survey strategy was comprehensive and the most effective way to identify the presence of Aboriginal heritage sites and objects within the proposal area.

It should be noted that the survey area exceeded the boundaries of the proposal area in order to accommodate any minor changes, as well as to cover potential impacts which may result from planting of a vegetation screening along the Mitchell Highway, should this be required.

4.2. SURVEY COVERAGE

Overall, visibility within the areas surveyed was very high and averaged more than 90%. Soils within the proposal area were generally heavily disturbed silty clay, and exhibited significance disturbance as a result of ploughing and cropping, grazing of livestock and erosion by wind and water. A number of very shallow drainage depressions were identified in the western portion of the proposal area. One area measuring approximately 20 metres by 20 metres in size also displayed evidence of recent fire, possibly related to farming practices. Table 4-1 shows the calculations of effective survey coverage for the field assessment. Plate 4-1 to Plate 4-6 show examples of the proposal area landforms and visibility. Allowing for an effective view width of approximately five metres for one person, a total of 158,500 square metres, or 15.85 hectares was inspected during the archaeological survey, including both pedestrian and vehicle survey, primarily within the development footprint, with additional transects undertaken along the north eastern boundary of the property, next to the Mitchell Highway. Allowing for visibility restrictions, the effective coverage overall is calculated to have been 14.27 hectares or 6.34% of the total proposal area, which has been calculated as 225 hectares including the development footprint, north eastern boundary between power easement and fenceline, and a buffer of up to 200 metres around the development footprint within the property boundary.

Overall it is considered that the archaeological survey programme achieved sufficient and effective coverage. The sites identified are considered to be a true reflection of the nature of the Aboriginal archaeological record present within the proposal area. The archaeological potential of the proposal area was assessed during the survey and it was determined that test excavation was not undertaken.



Plate 4-1 View north east along ploughed paddock within proposal area showing disturbance



Plate 4-2 View west from Mitchell Highway showing tree screen between road and proposal area



Plate 4-3 View showing scattered ashes in proposal area, result of recent burning related to farming practices



Plate 4-4 View from entrance to proposal area, facing south west, showing sparse vegetation



Plate 4-5 Derelict farm shed in proposal area



Plate 4-6 View west showing shallow depression

Table 4-1 Summary of effective survey coverage for the Yarren Hut Solar Farm

Survey Section/ Topography	Number of Survey Transects	Exposure type	Proposal Area ha	Surveyed area (length m x width m)	Survey Area m ²	Visibility	Effective coverage (area x visibility) m ²	Proposal Area surveyed (ha)	Percentage of Proposal area effectively surveyed	Survey result	Archaeological
Plain / flat	8	Vehicle tracks, ploughed land, erosion scours	225	2100x20, 2100x20, 1600x20, 1000x5, 300x5, 1500x5, 1500x5, 1200x5	158,500	90%	142,650	14.27	6.34	1 hearth with artefact 1 hearth 1 scarred tree	
Total	8	-	-	-	-	-	142,650	14.27	6.34	1 hearth with artefact 1 hearth 1 scarred tree	

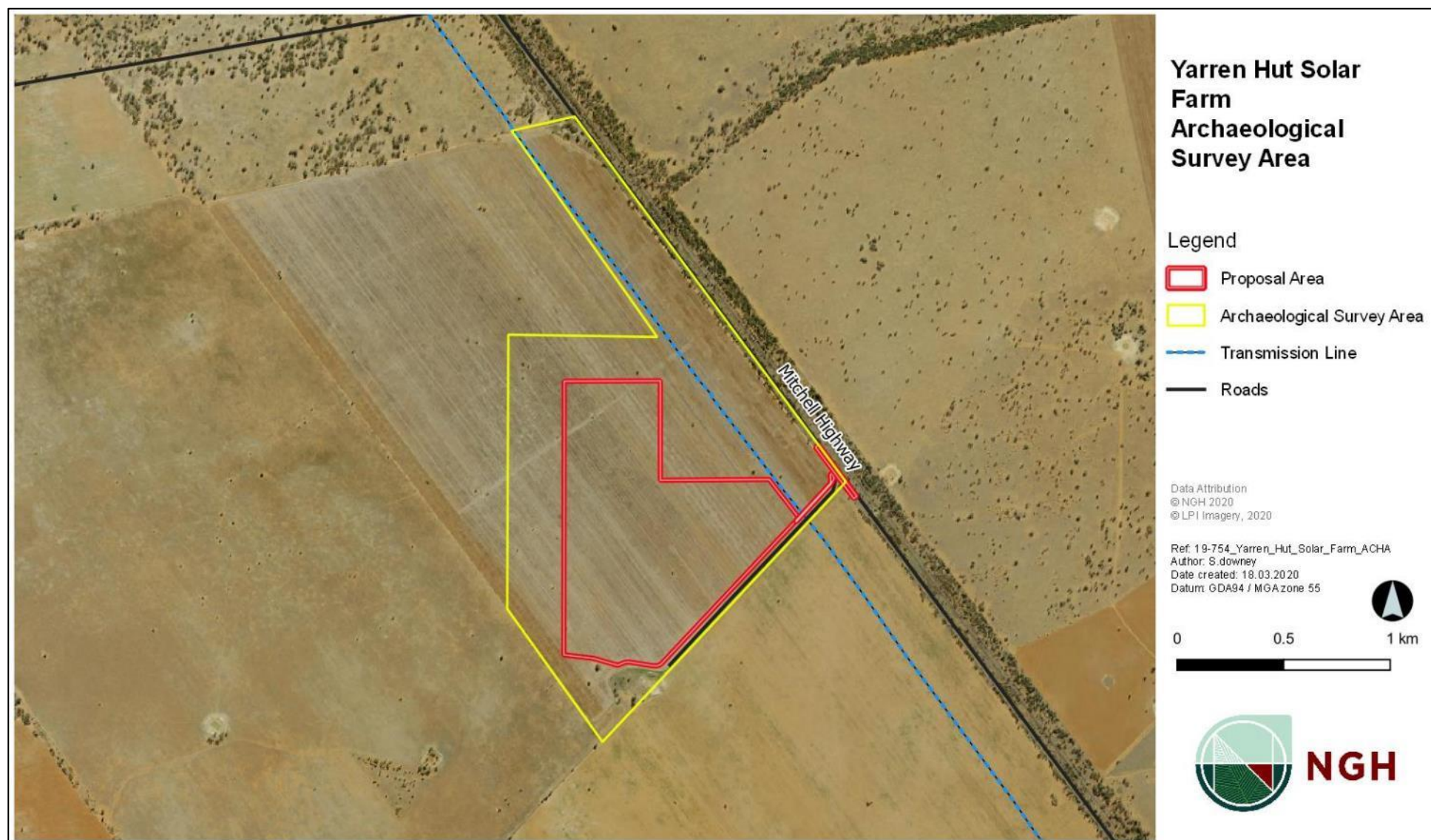


Figure 4-1 Area subject to archaeological survey

4.3. SURVEY RESULTS

Three Aboriginal sites were identified and recorded during the completion of the survey, including two hearth and one scarred tree. In addition to this, three additional “potential” scarred trees were also recorded, however the final assessment of these was that the scarring was not the result of cultural modification by past Aboriginal people. The locations of all the recorded trees are outside the proposed impact area of the development.

NGH Yarren Hut Hth 1

AHIMS

NGH Yarren Hut Hth 1 was located outside the proposed development footprint adjacent to the south western extent of the proposal. It comprised a cluster of burnt clay nodules and one artefact, a silcrete flake. The clay nodules are set in the silty clay B horizon soil, with loose pieces of other such nodules scattered within a one metre by 50-centimetre area. The artefact was located among the main nodules, on the surface. It is considered likely that erosion has exposed this site, of which only the base of the hearth remains embedded in the base clay. Information provided by the RAP representatives on site indicated that the burnt clay nodules were comparable to those they have recorded at other hearths sites within the region.



Plate 4-7 View north west showing location of Hth1



Plate 4-8 View north east along ploughed paddock within proposal area showing disturbance



Plate 4-9 Close up of burnt clay nodules embedded in B horizon silty clay, with single artefacts in top left of image



Plate 4-10 Silcrete flake identified at Hth1 site

NGH Yarren Hut Hth 2

AHIMS

NGH Yarren Hut Hth 2 was identified inside the development footprint, adjacent to the western boundary. It showed evidence of extensive disturbance as a result of ploughing, and included scattered, crushed fragments of burnt clay, across an area of two metres by one metre. No artefacts were identified at this location, however compact burnt clay nodules were recorded scattered on the ground surface and embedded in the exposed natural silty clay soils. The nodules differed significantly from unburnt clay clumps within other parts of the ploughed paddock, and also differed from other areas with evidence of burning which contained ash but no charcoal and were the result of recent burning associated with the farm. It was noted that a chain of shallow drainage depressions was present within 200 metres of the hearth, and that these were likely to have been ephemeral sources of water prior to extensive disturbance from farming.



Plate 4-11 View south east along ploughed paddock showing location of Hth2



Plate 4-12 Scattered burnt clay nodules at Hth2

NGH Yarren Hut ST1

AHIMS

This site consists of a scarred tree with one small cultural scar considered to be Aboriginal in origin, located in the north eastern corner of the property, near a farm dam, in a sparsely populated grove of trees. This location is outside the development footprint and was surveyed as part of the coverage intended to assess areas where potential vegetation screening may be required. The tree is alive, standing and appears to be a box species. It is in good condition with a base circumference of approximately three metres, and one scar assessed as conforming to the standard scarring morphology accepted for Aboriginal modification (cf. Long 2005). The narrow oval scar and the large misshapen oval scar are both located on the trunk of the tree facing west. The narrow oval scar measures 45 centimetres length, by 27 centimetres width, by 10 centimetres depth. The base of the narrow oval scar is approximately 87 centimetres above the ground. The misshapen larger oval scar measures 40 centimetres in length and 10 centimetres in width. The base of the larger misshapen oval scar is 40 centimetres from the ground. No axe marks were noted. The registered Aboriginal parties present during the survey indicated that the narrow oval scar may reflect manufacture of coolamon or other sort of food or water receptacle.



Plate 4-13 NGH Yarren Hut ST1, showing south facing scar



Plate 4-14 Close up of scar

Additional Information

Two additional trees were identified containing scars, however upon inspection, these were assessed to be the result of natural damage or damage as a result of machinery during fence construction and were not recorded as culturally modified trees as a result of this assessment. However, it is noted that they were recorded by Bogan Aboriginal Corporation as scarred trees in the report supplied to NGH following the survey.

4.3.1. Summary

Table 4-2 Summary of all cultural and archaeological sites recorded during survey of the Wagga Wagga Solar Farm South proposal area.

AHIMS	Name	Type
TBC	NGH Yarren Hut Hth1	Hearth with artefact
TBC	NGH Yarren Hut Hth2	Hearth

<i>AHIMS</i>	<i>Name</i>	<i>Type</i>
TBC	NGH Yarren Hut ST1	Scarred Tree

4.3.2. Consideration of Subsurface Potential

The field survey of the proposed Yarren Hut Solar Farm proposal site, in conjunction with an assessment of environmental and topographical data, geomorphology, landuse and archaeological modelling, along with consideration of comments from the RAPs resulted in the conclusion that there is no subsurface potential within the proposal area. This is due to two main factors. Firstly, heavy disturbance of the proposal area has occurred as a result of ploughing and harvesting of crops many times over a long period. Secondly the proposal area has been subject to significant erosion as a result of extensive vegetation clearance, periodic extreme flooding events and windstorms. These factors have resulted in the removal of much of the natural topsoil in the proposal area, exposing B horizon silty clays beneath scattered redeposited A horizon silts.

While two hearths were identified during the survey (NGH Yarren Hut Hth 1 and NGH Yarren Hut Hth2), it is assessed that these were heavily degraded and comprise only the last remnants of campsites. It is likely that any other archaeological material which may have remained in association with these campsites has been weathered away or destroyed during agricultural activities, and there is unlikely to be further archaeological potential associated with these sites below the top 2 to 5 centimetres of clay where the nodules have been embedded. Furthermore, as they are not associated with a permanent water course, and are instead within 200 metres of shallow drainage depressions which were likely to have contained water only during periods of heavy rainfall, campsites in this location are likely to have been small and lacking archaeological material even prior to disturbance. Such sites would have been abundant across the landscape in association with ephemeral drainage areas such as those present near the project area.

As only one surface artefact was identified during the survey, it has been assessed to be unlikely that archaeological subsurface deposits are present and this is substantiated by the clear deflation and degradation topsoil deposits caused by the landuse patterns over the course of the twentieth century.

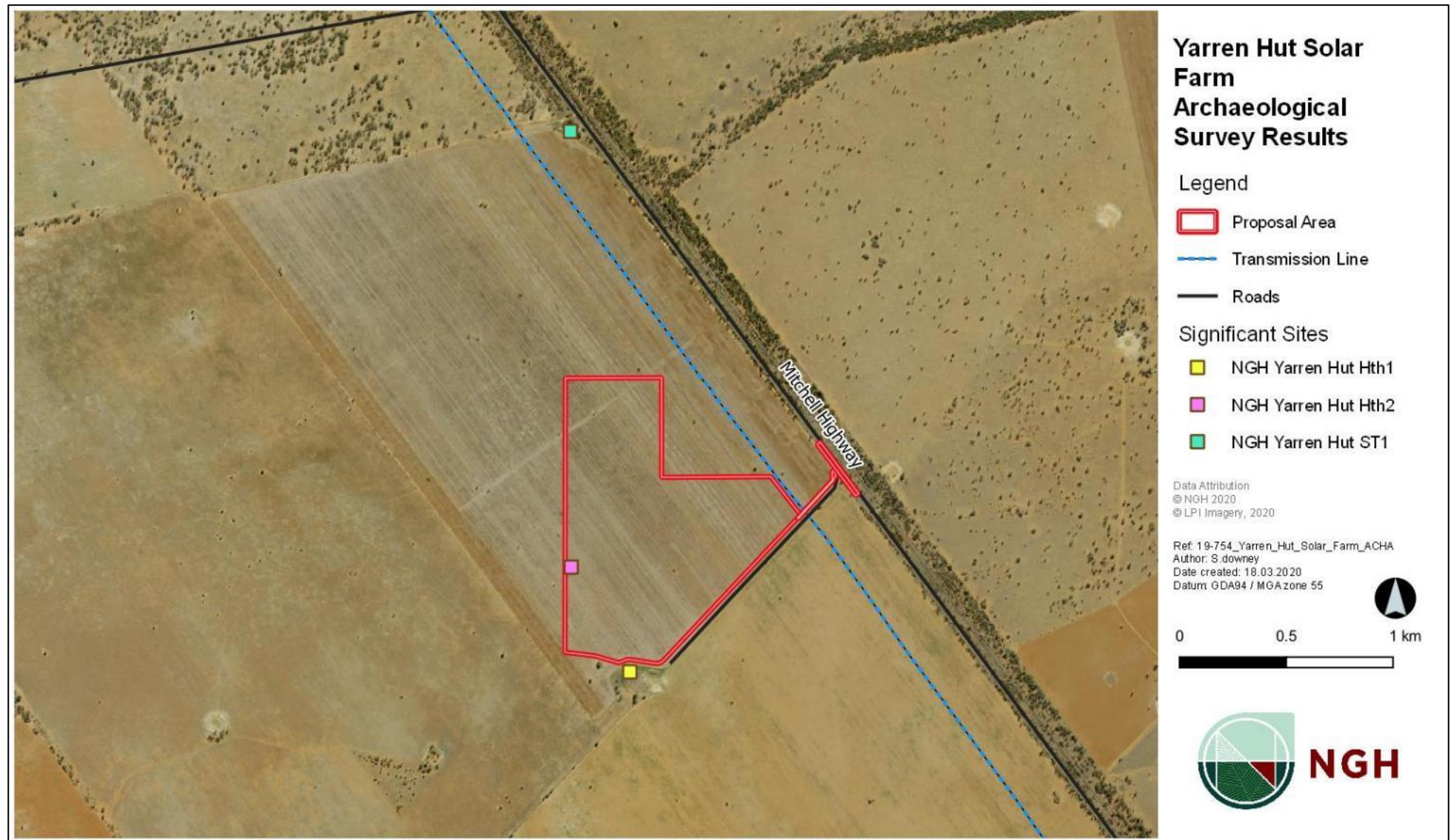


Figure 4-2 Sites identified during the ACHA Survey.

5. DISCUSSION

The predictions based on the modelling for the proposal area were that stone artefacts and scarred trees were the most likely manifestation of Aboriginal occupation likely to be identified in the area. It was noted that, due to the absence of a permanent water source in close vicinity to the proposal area, high density camp sites were unlikely to be present. The field survey has resulted in the identification of one scarred tree and two hearths, one of which also contained an artefact.

NGH Yarren Hut Hth2 was noted to be located within 200 metres of a slight clay depression, observable only while on the ground and not distinguishable in topographic maps, that would likely have been an ephemeral water source after periods of rainfall. While no such drainage depressions were identified near NGH Yarren Hut Hth1, this location was adjacent to a very large farm dam which had resulted in significant landform modifications and as such we consider it likely that there may have been such drainage depressions present prior to this modification. These results indicate that while sites can occur throughout the landscape, even in areas highly disturbed by farming activities, there is a dominance of Aboriginal cultural material recorded in close proximity to a water source.

The area was likely used intermittently, though not intensively, over a period of time for camping. This is evident by the presence of a scarred tree and stone artefacts. Based on this assumption, there is every chance that there are similar stone artefacts and scarred trees across similar landscapes in the Nyngan local area and that these site types, particularly hearths, could be more prevalent in the landscape than previously recorded.

The sites identified in this assessment are in close proximity to ephemeral water sources and are representative of the opportunistic use and movement of people through the landscape. They are most likely representative of the use of the back country between larger known water sources in the area with the Bogan River approximately 8 kilometres to the west at its closest point.

The identification of only a single scarred tree in the proposal area is likely to be the result the previous land clearing, and not indicative of a lack of use of the timber resources in the area by Aboriginal people.

While the sites themselves and the distribution of cultural material provide an indication that the area was used more than once, scarred trees and artefacts manufactured from silcrete are common for the general region, though no hearths have previously been recorded locally. It is considered highly likely that there are hearths present across this landscape in association with ephemeral water sources that have not yet been recorded. The presence of only one artefact indicates that tool manufacture was unlikely to have occurred onsite.

It should also be noted that the results of this investigation have increased the number of hearth sites recorded in the local area from nil to two. There appears to previously be a bias towards sites associated with the Bogan River to the south, especially more obvious site types such as scarred trees and surface scatters of artefacts. The implications for this relate to significance assessments and the related appraisal of site representativeness. We would argue that there are likely to be many such hearths sites, potentially associated with artefact sites, in the local area, and that the lack of a record of these sites in AHIMS is merely an indication that few surveys have been completed in the area and therefore they are yet to be found. Additionally this bias may be due to the broadscale farming practices and topsoil erosion which are prevalent in the area having degraded the archaeological record.

In terms of the current proposal therefore, extrapolating from the results of this survey, it is possible that additional stone artefacts or hearth sites could occur within the proposal area. However, consideration must also be given to the level of disturbance of any such sites. Based on the land use history of the proposal area, and an appraisal of the results from the field survey, there is negligible potential for the presence of intact subsurface deposits with high densities of objects or cultural material within the solar farm and powerline easement areas.

6. CULTURAL HERITAGE VALUES AND STATEMENT OF SIGNIFICANCE

The assessment of the significance of Aboriginal archaeological sites is currently undertaken largely with reference to criteria outlined in the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales* (OEH 2011), which are based on those in the ICOMOS Burra Charter (Marquis-Kyle and Walker 1994). Criteria used for assessment are:

- **Social or Cultural Value:** In the context of an Aboriginal heritage assessment, this value refers to the significance placed on a site or place by the local Aboriginal community – either in a contemporary or traditional setting.
- **Scientific Value:** Scientific value is the term employed to describe the potential of a site or place to answer research questions. In making an assessment of scientific value, issues such as representativeness, rarity and integrity are addressed. All archaeological places possess a degree of scientific value in that they contribute to understanding the distribution of evidence of past activities of people in the landscape. In the case of flaked stone artefact scatters, larger sites or those with more complex assemblages are more likely to be able to address questions about past economy and technology, giving them greater significance than smaller, less complex sites. Sites with stratified and potentially *in situ* sub-surface deposits, such as those found within rock shelters or depositional open environments, could address questions about the sequence and timing of past Aboriginal activity, and will be more significant than disturbed or deflated sites. Groups or complexes of sites that can be related to each other spatially or through time are generally of higher value than single sites.
- **Aesthetic Value:** Aesthetic values include those related to sensory perception and are not commonly identified as a principal value contributing to management priorities for Aboriginal archaeological sites, except for art sites.
- **Historic Value:** Historic value refers to a site or place's ability to contribute information on an important historic event, phase or person.
- **Other Values:** The Burra Charter makes allowance for the incorporation of other values into an assessment where such values are not covered by those listed above. Such values might include Educational Value.

All sites or places have some degree of value, but of course, some have more than others. In addition, where a site is deemed to be significant, it may be so on different levels or contexts ranging from local to regional to national, or in very rare cases, international. Further, sites may either be assessed individually, or where they occur in association with other sites the value of the complex should be considered.

6.1. SOCIAL OR CULTURAL VALUE

While the true cultural and social value of Aboriginal sites can only be determined by local Aboriginal people, in general, all sites hold cultural value to the local Aboriginal community. An opportunity to identify cultural and social value was provided to the Aboriginal representatives for this proposal through the consultation process which included providing comments on the methodology, participating in fieldwork and draft reporting process.

During fieldwork, it was noted that hearth sites and scarred trees are common sites in the local area, however no specific cultural value was attributed to the project area itself.

6.2. SCIENTIFIC (ARCHAEOLOGICAL) VALUE

The research potential of the sites located during this assessment is considered to be low to moderate. While the presence of the sites can be used to demonstrate definite use of these areas by Aboriginal people and may assist in the development of modelling for the local landscape, their value for further scientific research is limited due to the significant disturbance which has taken place as a result of farming practices and erosion.

As the proposal area would have once been covered with bumble box and river red gums and various understorey grasses, it is likely that there would at a time have been abundant timber for exploitation by the local groups. The scarred tree located in the survey area most likely represents use of an abundant resource in the area, and the rarity of the site type within the proposal area is arguably a result of the broadscale vegetation clearance undertaken across the site. While it is reasonable to assume that scarred trees may at one time have been prevalent in the region, the fact remains that, due to vegetation clearing they are now less abundant. Having said this, the predictive modelling undertaken as part of this assessment indicates that this is a site type to be expected in the area. Ultimately, the significance of the scarred tree does not relate to its abundance or rarity at the present time, but to the fact that living trees such as this will eventually die and they are therefore a limited cultural resource which will decrease through time.

While the hearths themselves are intrinsically interesting in terms of their simple presence, their scientific value for further research is limited due to two prevailing factors. Firstly, the landscape and topsoil has been degraded to the degree that the sites are likely to only occupy the present top 2-5cm of the clay soils in which they exist. Therefore there is limited potential for further information to be yielded through testing these sites. Secondly, any further archaeological evidence for (even intermittent) Aboriginal occupation, such as artefacts, remains of animal bones or freshwater shells, has been all but deleted from the archaeological record through land-use and erosion. The single artefact identified within the general context of NGH Yarren Hut Hth1 is able to provide only limited scientific information based on its technical attributes and it provides little further information regarding occupation across the landscape.

As the two hearths and one scarred tree are the only known sites within more than ten kilometres of the proposal area, these sites are considered to have scientific value based on representativeness and rarity. Having said that, personal communication with Lesly Ryan of Bogan Aboriginal Corporation during survey related that other hearths are known within the locality. As related in the discussion above, the rarity of this site type currently represented in the AHIMS database is likely to be a result of the broadscale degradation and erosion of the natural topsoil layer along with the lack of previous Archaeological survey within the region. Furthermore, it is likely that more intact examples are present in areas where disturbances have been less extensive than in the current proposal area.

6.3. AESTHETIC VALUE

There are no aesthetic values associated with the archaeological site. The modified and heavily disturbed landscape within the solar farm development area however detracts from this aesthetic setting.

6.4. HISTORIC VALUE

There are no known historical values associated with the proposal area or with the archaeological sites identified.

6.5. OTHER VALUES

There are no other known heritage values associated with the subject area. The area may have some educational value (not related to archaeological research) through educational material provided to the public about the Aboriginal occupation and use of the area, although the archaeological material is within private property and there is little for the public to see.

7. PROPOSED ACTIVITY

7.1. HISTORY AND LAND USE

It has been noted that historically the solar farm proposal area has been impacted to some extent through land use practices such as extensive vegetation clearance and agricultural cropping, with secondary impacts occurring as a result of erosion by wind and water movement during periods of soil exposure. An electricity easement has also been installed within part of the proposed development area.

There are a number of archaeological implications which result from these impacts, specifically that: artefact sites and hearths are likely to have been subject to disturbance or may have been damaged or moved, but may be present in the general area; and scarred trees will only be present within areas where remnant mature vegetation is retained.

Despite the existing impacts, two hearths, one with a single artefact, and one scarred tree remain in the area, indicating the presence of past Aboriginal people and their use of this landscape.

7.2. PROPOSED DEVELOPMENT ACTIVITY

As noted above Section 1.2, the Yarren Hut Solar Farm proposal involves the construction of a ground-mounted photovoltaic solar farm which would generate approximately 28 MW alternating current (AC) of renewable energy.

The design of the proposed development is somewhat adaptable and would be refined to avoid adverse impacts where feasible, and to minimise/mitigate environmental impacts if avoidance is not possible. The design would consider the results of consultation with relevant Aboriginal stakeholders, and the ACHA and EIS when prepared.

The proposal would consist of the following components:

- Single-axis tracker photovoltaic solar panels mounted on steel frames (approximately 84,000 PV solar panels).
- Underground electrical conduits and cabling to connect the arrays and the inverters and transformers.
- Inverters, transformers and electrical conduits.
- Onsite substation / switchyard.
- 66 kV electrical transmission line to connect the proposal to the existing Essential Energy Nyngan to Bourke transmission line.
- Site office, site compound, vehicle parking areas, access tracks and perimeter fencing.
- Site access from the Mitchell Highway.

The proposal is expected to operate for 50 years. The construction phase of the proposal planned to commence in Q3 2021 and would last 6 months. After the initial operating period, the solar farm would either be decommissioned, removing all above-ground infrastructure and returning the site to its existing land capability, or upgraded with new PV equipment. The proposed development has an estimated capital investment cost greater than \$30 million. The proposal is therefore classified as SSD under Part 4 of the EP&A Act.

7.3. ASSESSMENT OF HARM

As described in this report, three archaeological sites were identified within the proposal area, one of which was within the proposed development footprint. However, the proposal has been amended to avoid this site and as such none of the three sites will be harmed as a result of the proposed solar farm. The following table

provides a summary of the degree of harm and the consequence of that harm with regards to heritage value of each site resulting from the proposed works for the solar farm.

Table 7-1. Summary of the degree of harm and the consequence of that harm upon site types

Site Type	Type of Harm	Degree of Harm	Consequence of harm	No. of Sites	% of site type
NGH Yarren Hut Hth1	Nil	Nil	None – avoided by the proposed development	1	66.66%
NGH Yarren Hut Hth2	Nil	Nil	None – avoided by the proposed development	1	66.66%
NGH Yarren Hut ST1	Nil	Nil	None – avoided by the proposed development	1	66.66%

There are identified Aboriginal objects present within the solar farm and this assessment has concluded that there is some potential that other cultural material may be present, albeit in low densities. The proposed level of disturbance for the construction of the solar farm can be redesigned to avoid impact to the hearth located within the boundary of the proposed development. It should be noted that, while the survey attempted to provide as much coverage as possible, there is some potential for additional sites, likely isolated artefacts or clay nodules associated with destroyed hearths, to be present within the proposal area outside of areas covered by the transects. However, it is considered that the survey provided adequate coverage and that no intact or substantial sites are likely to be present within the survey area

Aspects of the Project Proposal which have the highest potential to impact Aboriginal archaeology are considered to be the extensive earthworks for the installation of cabling and the transmission line poles, which have the potential to cause the removal, breakage and displacement of artefacts or clay nodules related to a hearth. This would be considered a direct impact on sites and Aboriginal objects. However, the development footprint can be amended to avoid impact to NGH Yarren Hut Hth 2, which will result in limiting these potential impacts. The construction of access and maintenance tracks may involve some grading but given the flat nature of the terrain, this is likely to be minimal. The installation of the solar arrays involves drilling or screwing the piles into the ground and no widespread ground disturbance work such as grading is required to accomplish this.

The assessment of harm overall for the project is therefore assessed to be low.

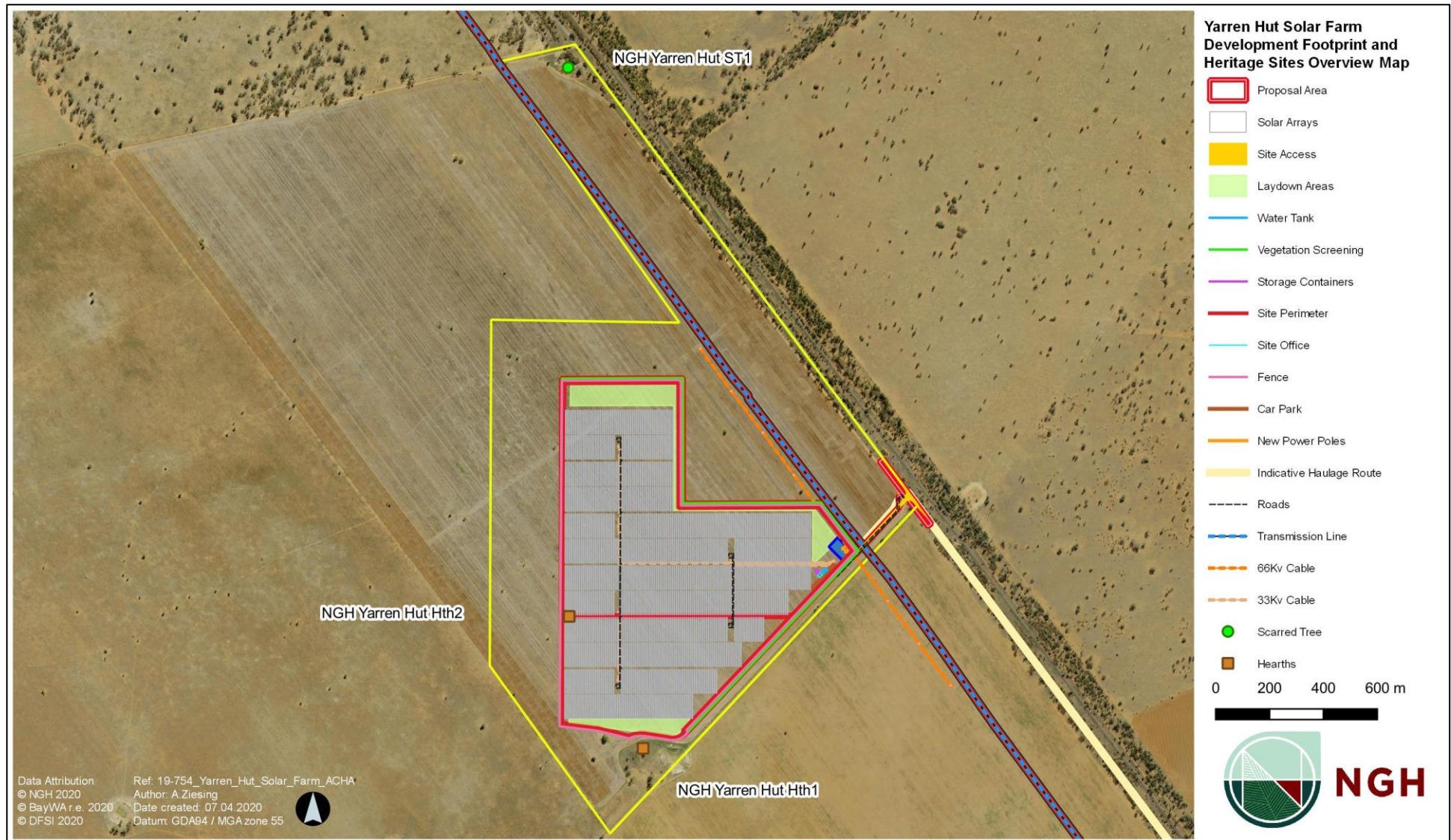


Figure 7-1 Modified proposed development footprint with heritage sites overlayed.



Figure 7-2 Close up of hearth sites and modified proposed development footprint

7.4. IMPACTS TO VALUES

The Modified Proposed Development Footprint will ensure that impacts to the three sites located during this assessment will be negated. Therefore impacts to the values associated with these sites will be to any social and cultural values attributed to the artefacts and the sites by the registered Aboriginal parties. The extent to which the loss of sites or parts of the sites would impact on the community is only something the Aboriginal community can articulate, however as these will be avoided it is likely that they will be minimised.

The impact to values for this development are summarised in Table 7-21 above.

In the event that the proposal is not able to be amended to match the Modified Proposed Development Footprint as shown in Figure 7-1, the impact to identified scientific values of the site NGH Yarren Hut Hth2 is considered low. However, the intrinsic values of the Aboriginal objects themselves may be affected by the development of the site. Any removal of the artefacts, or their breakage would reduce the low scientific value they retain. It is noted that the proposal should be amended to avoid impact to this site.

The sites NGH Yarren Hut Hth1 (hearth with artefacts) and NGH Yarren Hut ST1 (scarred tree) will not be impacted by the project as per the proposed design in this report.

No other values have been identified that would be affected by the development proposal.

Table 7-2. Identified risk to known sites.

AHIMS #	Site name	Site integrity	Scientific significance	Type of harm	Degree of harm	Consequence of harm	Recommendation
	NGH Yarren Hut Hth1	Poor	Low-moderate	Nil	Nil	Nil	Avoidance. Site to be fenced with barrier mesh or other suitable fencing with a 10 metre buffer.
	NGH Yarren Hut Hth2	Poor	Low-moderate	Nil	Nil	Nil	Site to be fenced with barrier mesh or other suitable fencing with a 10 metre buffer.
	NGH Yarren Hut ST1	Good	Moderate	Nil	Nil	Nil	No action required.

8. AVOIDING OR MITIGATING HARM

8.1. CONSIDERATION OF ESD PRINCIPLES

Consideration of the principles of Ecologically Sustainable Development (ESD) and the use of the precautionary principle was undertaken when assessing the harm to the sites and the potential for mitigating impacts to the sites recorded within the Yarren Hut Solar Farm proposal area. The main consideration was the cumulative effect of the proposed impact to the sites and the wider archaeological record. The precautionary principle in relation to Aboriginal heritage implies that development proposals should be carefully evaluated to identify possible impacts and assess the risk of potential consequences.

In broad terms, the archaeological material located during this investigation is similar to what has been found previously within the Bogan River region. The immediate local area previously only had scarred trees recorded. However, the identification of stone a stone artefact and two hearths during this survey suggests that the dominance of scarred trees in the local area on the AHIMS is the result of a lack of survey and not an accurate representation of the archaeological record.

Currently there is no clear regional synthesis of the nature, number, extent and content for archaeological sites within the Bogan Shire Council LGA. Nevertheless, given the size of the geographical area, it is certain that there would be similar artefacts and scarred trees present within the region. The result of this Aboriginal heritage assessment has confirmed the proposed model of site location and site distribution, whereby sites could be expected to occur in close proximity to a water source, even in ploughed areas.

The implication for ESD principles is that other artefacts and scarred trees are likely to be present in the district, and likely in better condition than those identified in the proposal area.

As noted above, the archaeological values of the sites, considering the scientific, representative and rarity values was deemed to be low to moderate within the solar farm given that in terms of representativeness and rarity the lack of sites in AHIMS for the local area is merely an indication that few surveys have been undertaken and therefore they are yet to be found. Additionally, the proposal area has been modified to avoid all three sites. It is believed therefore that the proposed impacts to the sites through the development would not adversely affect the broader archaeological record for the local area or the region.

The principle of inter-generational equity requires the present generation to ensure that the sites and diversity of the archaeological record is maintained or enhanced for the benefit of future generations. We believe that the diversity of the archaeological record is not compromised by development of this particular solar farm proposal.

It should be remarked, with relation to scarred trees specifically, that even in an area where such site types are abundant, their significance does not relate to their abundance or rarity at the present time, but to the fact that living trees such as this will eventually die and they are therefore a limited cultural resource which will decrease through time. With relation to the principles of ESD therefore, these trees are of elevated significance due to their decreasing nature. The project will have no impact on the scarred tree located during this assessment.

We therefore consider that, while the current development proposal, if it remains unmodified, may impact one hearth site, the overall cumulative impact on the archaeological record for the region is likely to be minimal. If the recommended modification to the proposal area as shown in Figure 7-1 is incorporated into the design, there will be no impacts to known Aboriginal objects as part of this proposal.

It is argued that the cumulative impacts of the proposal are not enough to reject outright the development proposal.

8.2. CONSIDERATION OF HARM

Limiting harm to the sites is possible through avoidance, particularly for NGH Yarren Hut Hth1 and NGH Yarren Hut ST1, which are located outside the development footprint. However, the position of NGH Yarren Hut Hth2 requires that the western boundary of the proposal be amended in order to avoid impact to this site. This can be integrated into the proposal design as shown in Figure 7-1 and 7-2 and the site would then be outside of the proposed impact zone for the works.

Proposed impact is likely to be most extensive where earthworks occur such as the installation of cabling and the transmission line poles, which, were sites present, may involve the removal, breakage and displacement of artefacts or clay nodules related to a hearth. However, the proposed construction methodology for the project will result in limited disturbance areas. The construction of access and maintenance tracks may involve some grading but given the flat nature of the terrain, this is likely to be minimal. The installation of the solar arrays involves drilling or screwing the piles into the ground and no widespread ground disturbance work such as grading is required to accomplish this.

Based on the assessment of the sites and artefacts, and with consideration of discussions with the Aboriginal representatives during the field survey, it is not considered necessary to prevent development at the solar farm location, especially as total avoidance of the three identified sites can be achieved through redesign of the proposal. The sites have been shown to be in highly disturbed contexts with little remaining scientific value. Aboriginal cultural value has been determined by the local Aboriginal community to be generally low enough to not prevent the development proposal proceeding.

Where avoidance can be achieved, it is recommended that the existing sites be fenced with a 10 metres buffer during construction, operation and decommissioning of the solar farm in order to prevent inadvertent impact as a result of the project.

9. LEGISLATIVE CONTEXT

Aboriginal heritage is primarily protected under the NPW Act and as subsequently amended in 2010 with the introduction of the *National Parks and Wildlife Amendment (Aboriginal Objects and Places) Regulation 2010*. The aim of the NPW Act includes:

The conservation of objects, places or features (including biological diversity) of cultural value within the landscape, including but not limited to: places, objects and features of significance to Aboriginal people.

An Aboriginal object is defined as:

Any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with the occupation of that area by persons on non-Aboriginal extraction and includes Aboriginal remains.

Part 6 of the NPW Act concerns Aboriginal objects and places and various sections describe the offences, defences and requirements to harm an Aboriginal object or place. The main offences under section 86 of the NPW Act are:

- A person must not harm or desecrate an object that the person knows is an Aboriginal object.
- A person must not harm an Aboriginal object.
- For the purposes of this section, "circumstances of aggravation" are:
 - that the offence was committed in the course of carrying out a commercial activity, or
 - that the offence was the second or subsequent occasion on which the offender was convicted of an offence under this section.
- A person must not harm or desecrate an Aboriginal place.

Under section 87 of the NPW Act, there are specified defences to prosecution including authorisation through an Aboriginal Heritage Impact Permit (AHIP) or through exercising due diligence or compliance through the regulation.

Section 89A of the Act also requires that a person who is aware of an Aboriginal object, must notify the Director-General in a prescribed manner. In effect this section requires the completion of AHIMS site cards for all sites located during heritage surveys.

The EP&A Act is legislation for the management of development in NSW. It sets up a planning structure that requires developers (individuals or companies) to consider the environmental impacts of new projects. Under this Act, cultural heritage is considered to be a part of the environment. This Act requires that Aboriginal cultural heritage and the possible impacts to Aboriginal heritage that development may have are formally considered in land-use planning and development approval processes.

Proposals classified as State Significant Development or State Significant Infrastructure under the EP&A Act have a different assessment regime. As part of this process, Section 90 harm provisions under the NPW Act are not required, that is, an AHIP is not required to impact Aboriginal objects. However, the Department of Planning, Industry and Environment (DPIE) is required to ensure that Aboriginal heritage is considered in the environmental impact assessment process. The DPIE will consult with other departments as required prior to development consent being approved.

The Yarren Hut Solar Farm proposal is a State Significant Development and will therefore be assessed via this pathway, which does not negate the need to carry out an appropriate level of Aboriginal heritage assessment or the need to conduct Aboriginal consultation in line with the requirements outlined by the OEH *Aboriginal cultural heritage consultation requirements for proponents 2010* (OEH 2010b).

10. RECOMMENDATIONS

The recommendations are based on the following information and considerations:

- Results of the current archaeological survey and subsurface testing program of the area;
- Consideration of results from other local archaeological studies;
- Results of consultation with the registered Aboriginal parties;
- The assessed significance of the sites;
- Appraisal of the proposed development, and
- Legislative context for the development proposal.

It is recommended that:

1. The proposed development should be redesigned in order to avoid impacts to the location of NGH Yarren Hut Hth2, on the western boundary of the development footprint. A buffer of 10 metres around the location of the site must be established using barrier mesh fencing or similar, to be placed prior to the commencement of any proposed works. Where avoidance is not possible, further archaeological works in the form of salvage will be required.
2. The location of NGH Yarren Hut Hth1 should be protected by the placement of barrier mesh fencing or similar delineating a 10-metre buffer around the location of the recorded site.
3. The location of NGH Yarren Hut ST1 will not be subject to any impacts as a result of the proposal per current design plans. This site must not be subject to any direct or indirect impacts as a result of the development, including movement of vehicles and machinery on site or maintenance of any existing or new facilities.
4. Where recommendations 1 to 3 are met, the proposal may proceed with caution within the development footprint. No additional archaeological investigation is required for this site.
5. BayWa must prepare a Cultural Heritage Management Plan (CHMP) to manage the existing sites near the proposed development and to address the potential for finding additional Aboriginal objects during the construction of the solar farm. The CHMP will outline an unexpected finds protocol to deal with construction activity. Preparation of the CHMP should be undertaken in consultation with the registered Aboriginal parties.
6. In the unlikely event that human remains are discovered during the construction, all work must cease in the immediate vicinity. OEH, the local police and the registered Aboriginal parties should be notified. Further assessment would be undertaken to determine if the remains were Aboriginal or non-Aboriginal.
7. Further archaeological assessment would be required if the proposal activity extends beyond the area of the current investigation. This would include consultation with the registered Aboriginal party and may include further field survey.

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APPENDIX A UNEXPECTED FINDS

A.1 INTRODUCTION

This unexpected find protocol has been developed to provide a method for managing unexpected non-Aboriginal and Aboriginal heritage items identified during the construction and maintenance of the Project. The unexpected find protocol has been developed to ensure the successful delivery of the Project while adhering to the NSW National Parks and Wildlife Act 1974 (NPW Act) and the Heritage Act 1977 (Heritage Act).

All Aboriginal heritage objects are protected under the NPW Act, however an AHIP may be issued under Part 6 of the Act allows for conditional harm to objects. There are, however, some circumstances where despite undertaking appropriate heritage assessment prior to the commencement of works Aboriginal cultural heritage items or places are encountered that were not anticipated which may be of scientific and/or cultural significance.

Therefore, it is possible that unexpected heritage items may be identified during construction, operation and maintenance works. If this happens the following unexpected find protocol should be implemented to avoid breaching obligations under the NPW Act. This unexpected find protocol provides guidance as to the circumstances under which finds may occur and the actions subsequently required.

A.2 WHAT IS AN UNEXPECTED FIND?

An unexpected heritage find is defined as any possible Aboriginal or non-Aboriginal heritage object or place, that was not identified or predicted by the project's heritage assessment and is not covered by appropriate permits or development consent conditions. Such finds have potential to be culturally significant and may need to be assessed prior to development impact.

Unexpected heritage finds may include:

- Aboriginal stone artefacts, shell middens, modified trees, mounds, hearths, stone resources and rock art;
- Human skeletal remains; and
- Remains of historic infrastructure and relics.

A.3 ABORIGINAL HERITAGE PLACE OR OBJECTS

All Aboriginal objects are protected under the NPW Act.

An Aboriginal object is defined as:

Any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with the occupation of that area by persons on non-Aboriginal extraction and includes Aboriginal remains.

All Aboriginal objects are protected, and it is an offence to harm or desecrate an Aboriginal object or place.

A.4 HISTORIC HERITAGE

The *Heritage Act 1977* protects relics which are defined as:

Any deposit, artefact, object or material evidence that relates to the settlement of the area that comprises NSW, not being Aboriginal settlement; and is of State or local heritage significance.

A.5 UNEXPECTED FINDS MANAGEMENT PROCEDURE

In the event that any unexpected Aboriginal heritage places or objects or any substantial intact historic archaeological relics that may be of State or local significance are unexpectedly discovered during the Project, the following management protocols will be implemented. **Note: this process does not apply to human or suspected human remains. Follow Section A.6 Human Skeletal Remains below if remains or suspected remains are encountered.**

1. Works within the immediate identified heritage location will cease. Personnel should notify their supervisor of the find, who will notify the project manager.
2. Establish whether the unexpected find is located within an area covered by an approved AHIP or whether it is outside based on Appendix B.
3. If the find it is determined to be covered under an approved AHIP undertake the following steps
 - (a) Establish an appropriate buffer zone of at least 20 metres to allow for the assessment and management of the find. All site personnel will be informed about the buffer zone with no further works to occur within the buffer zone.
 - (b) A heritage specialist or the project archaeologist will be engaged to assess the Aboriginal place or object encountered and undertake appropriate salvage of the site in line with the mitigation methods and approval requirements of the AHIP
 - (c) Following appropriate salvage of the unexpected find works may continue at this location
4. **If the unexpected find is not covered under the existing approved AHIP undertake the following steps.**
 - (a) All works at this location must cease.
 - (b) An appropriate buffer zone of at least 20 metres to allow for the assessment and management of the find must be established. All site personnel will be informed about the buffer zone with no further works to occur.
 - (c) A heritage specialist or the project archaeologist will be engaged to assess the Aboriginal place or object encountered. Registered Aboriginal Party (RAP) representatives may also be engaged to assess the cultural significance of the place or object.
 - (d) The discovery of an Aboriginal place or object will be reported to the local office of the DPIE and works will not recommence at the heritage place or object until advised to do so by DPIE.
 - (e) If the unexpected find can be managed in situ, works at the location will not recommence until appropriate heritage management controls have been implemented, such as protective fencing.
 - (f) If the unexpected find cannot be managed in situ, works at the heritage location will not recommence until further assessment is undertaken and appropriate permits to impact Aboriginal cultural heritage are approved and issued by DPIE.
5. For historic relics, work must cease in the affected area and the Heritage Council must be notified in writing. This is in accordance with section 146 of the Heritage Act 1977.
6. Depending on the nature of the discovery, additional assessment may be required prior to the recommencement of work in the area. At a minimum, any find should be recorded by an archaeologist.

A.6 HUMAN SKELETAL REMAINS

If any human remains or suspected human remains are discovered during any works, all activity in the area must cease immediately. The following plan describes the actions that must be taken in instances where human remains, or suspected human remains are discovered. Any such discovery at the activity area must follow these steps.

Discovery:

- If any human remains or suspected human remains are found during any activity, works in the vicinity **must** cease and the Project Manager must be contacted immediately.

- The remains must be left in place and protected from harm or damage.
- All personnel should then leave the area immediately.
- Where there is doubt to the species of bone material encountered, a physical anthropologist may be consulted to make an assessment as to whether bone material is likely to be of human origin.

Notification:

- Where the bone material is determined to be likely of human origin, the NSW Police must be notified immediately. Details of the location and nature of the human remains must be provided to the relevant authorities.
- If there are reasonable grounds to believe that the remains are Aboriginal, the following must occur;
 - (i) The DPIE must be contacted as soon as practicable and provide any available details of the remains and their location. The DPIE's Environment Line can be contacted on 131 555;
 - (ii) The relevant Aboriginal community groups must be notified immediately (at a minimum all the RAPs)
 - (iii) The relevant project archaeologist may be contacted to facilitate communication between the police, DPIE and Aboriginal community groups.

Process:

- If the remains are considered to be Aboriginal by the Police and DPIE no work can recommence at the particular location unless authorised in writing by DPIE.
- Recording of Aboriginal ancestral remains must be undertaken by, or be conducted under the direct supervision of, a specialist physical anthropologist or other suitably qualified person.
- Archaeological reporting of Aboriginal ancestral remains must be undertaken by, or reviewed by, a specialist physical anthropologist or other suitably qualified person, with the intent of using respectful and appropriate language and treating the ancestral remains as the remains of Aboriginal people rather than as scientific specimens.
- If the remains are considered to be Aboriginal by the Police and DPIE, an appropriate management and mitigation, or salvage strategy will be implemented following further consultation with the Aboriginal community and DPIE.

APPENDIX B ABORIGINAL CONSULTATION

Organisation	Contact	Action	Date Sent	Reply Date	Replied by	Comments
Notification of Registration Letters						Closes 20th of December 2019
Nyngan Local Aboriginal Land Council	Venetta Dutton	letter sent via email	2/12/2019			
Bogan Shire Council	Tony Payne	letter sent via email	2/12/2019	4/12/2019	Email	Suggested contacting Nyngan LALC
Central West LLS		letter sent via email	2/12/2019			
ORALRA	Elizabeth Loane	letter sent via email	2/12/2019	3/12/2019	Letter via email	Suggesting contacting Nyngan LALC
NTSCorp		letter sent via email	2/12/2019			
BCD Northwest	Helen Knight	letter sent via email	2/12/2019	5/12/2019	Letter via email	Suggested contacting Nyngan LALC, Bogan Aboriginal Corporation, John Shipp, Trevor Robinson, Wiradjuri Intermin Working Party, Corroborree Aboriginal Corporation
Newspaper Advertisement	Nyngan Observer	advertisement sent via email	4/12/2019			
Groups from BCD						
Nyngan LALC	Venetta Dutton	already contacted, but at different address. Second letter sent to	6/12/2019			

Organisation	Contact	Action	Date Sent	Reply Date	Replied by	Comments
		address provided by BCD				
Bogan Aboriginal Corporation	Lesly Ryan	letter sent	6/12/2019	15/12/2019	Email	AZ acknowledged registration via email
John Shipp		letter sent	6/12/2019			
Trevor Robinson		letter sent	6/12/2019	9/12/2019	letter returned to sender	BCD informed that contact details are incorrect
Wiradjuri Interim Working Party		letter sent	6/12/2019	9/12/2019	letter returned to sender	BCD informed that contact details are incorrect
Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson	letter sent via email	6/12/2019	6/12/2019	Email	AZ acknowledged registration via email
Draft Methodology Sent to RAPS						
Bogan Aboriginal Corporation	Lesly Ryan	methodology sent via email	16/01/2020			
Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson	methodology sent via email	16/01/2020			
OEH informed of RAPS	Helen Knight	email	16/01/2020			

Organisation	Contact	Action	Date Sent	Reply Date	Replied by	Comments
Reminder sent to RAPS re draft methodology						
Bogan Aboriginal Corporation	Lesly Ryan	reminder sent via email	11/02/2020			
Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson	reminder sent via email	11/02/2020			
Fieldwork						
Bogan Aboriginal Corporation	Lesly Ryan	invitation sent via email	11/02/2020			
Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson	invitation sent via email	11/02/2020			
Draft Report Sent to RAPs						
Bogan Aboriginal Corporation	Lesly Ryan	Report sent via email				
Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson	Report sent via email				

4 December 2019

Senior Team Leader
Planning – Central West and Orana
Biodiversity and Conservation
Department of Planning, Industry and Environment



rog.centralwest@environment.nsw.gov.au
Andrew.Fisher@environment.nsw.gov.au

Dear Sir or Madam,

Re: 19-754 Request for registration of Aboriginal stakeholders for proposed Yarren Hut Solar Farm, Nyngan NSW

NGH Pty Ltd (NGH) has been engaged by BayWA r.e. (45 Denison St, Bondi Junction, NSW 2022) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) for the proposed 25 Megawatt (MW) solar farm covering 92 hectares of Lot 21 DP704061 in the Bogan Shire LGA (see attached figure). Access to the proposal area will be gained from a private access track of the Mitchell Highway. The purpose of this consultation is to provide an opportunity for Aboriginal community stakeholders to assist in the preparation of the ACHA; be involved in consultation regarding Aboriginal cultural heritage; and be involved in the assessment of sites and management of potential impacts to those sites which may result from the proposal.

In order to fulfil the requirements set out in the Aboriginal cultural heritage consultation requirements for proponents 2010, NGH is seeking interested Aboriginal parties who hold cultural knowledge of the assessment area to register their interest in the consultation process for the project and to assist in the determination of cultural significance of any Aboriginal objects or places located there. NGH is therefore seeking any information from you about Aboriginal people who may hold cultural knowledge regarding Aboriginal objects or places within the study area. If you know of any Aboriginal parties who may hold cultural knowledge, could you please provide this information in writing by **Wednesday 18th of December 2019** to:

NGH Pty Ltd
PO Box 5464
WAGGA WAGGA NSW 2650
Or Via Email to: amy.z@nghconsulting.com.au

Yours sincerely,

Amy Ziesing
Heritage Consultant
02 6923 1548
NGH Pty Ltd
ABN: 31 124 444 622 / ACN: 124 444 622





NGH



Yarren Hut Solar Farm Proposal Area Map

- Legend**
-  Development Site
 -  Lot Boundary
 -  Transmission Line

0 500 1000 m



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 © DFSI 2019

Ref: 19-754_Yarren_Hut_Solar_Farm_ACHA
 Author: A.Ziesing
 Date created: 22.11.2019
 Datum: GDA94 / MGA zone 55



NGH

4 December 2019

The Manager
Bogan Shire Council
PO Box 221,
NYNGAN NSW 2825

admin@bogan.nsw.gov.au



Dear Sir or Madam,

Re: 19-754 Request for registration of Aboriginal stakeholders for proposed Yarren Hut Solar Farm, Nyngan NSW

NGH Pty Ltd (NGH) has been engaged by BayWA r.e. (45 Denison St, Bondi Junction, NSW 2022) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) for the proposed 25 Megawatt (MW) solar farm covering 92 hectares of Lot 21 DP704061 in the Bogan Shire LGA (see attached figure). Access to the proposal area will be gained from a private access track of the Mitchell Highway. The purpose of this consultation is to provide an opportunity for Aboriginal community stakeholders to assist in the preparation of the ACHA; be involved in consultation regarding Aboriginal cultural heritage; and be involved in the assessment of sites and management of potential impacts to those sites which may result from the proposal.

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Or Via Email to: amy.z@nghconsulting.com.au

Yours sincerely,

Amy Ziesing
Heritage Consultant
02 6923 1548
NGH Pty Ltd
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ABN 31 124 444 622 ACN 124 444 622



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Yarren Hut Solar Farm Proposal Area Map

Legend

-  Development Site
-  Lot Boundary
-  Transmission Line

0 500 1000 m



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© DFSI 2019

Ref: 19-754_Yarren_Hut_Solar_Farm_ACHA
Author: A.Ziesing
Date created: 22.11.2019
Datum: GDA94 / MGA zone 55



NGH

4 December 2019

The Manager
Central West Local Land Services
PO Box 6082,
DUBBO NSW 2830

Admin.centralwest@lls.nsw.gov.au



Dear Sir or Madam,

Re: 19-754 Request for registration of Aboriginal stakeholders for proposed Yarren Hut Solar Farm, Nyngan NSW

NGH Pty Ltd (NGH) has been engaged by BayWA r.e. (45 Denison St, Bondi Junction, NSW 2022) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) for the proposed 25 Megawatt (MW) solar farm covering 92 hectares of Lot 21 DP704061 in the Bogan Shire LGA (see attached figure). Access to the proposal area will be gained from a private access track of the Mitchell Highway. The purpose of this consultation is to provide an opportunity for Aboriginal community stakeholders to assist in the preparation of the ACHA; be involved in consultation regarding Aboriginal cultural heritage; and be involved in the assessment of sites and management of potential impacts to those sites which may result from the proposal.

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Yours sincerely,

Amy Ziesing

Heritage Consultant

02 6923 1548

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ABN 31 124 444 622 ACN 124 444 622



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Yarren Hut Solar Farm Proposal Area Map

- Legend**
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Ref: 19-754_Yarren_Hut_Solar_Farm_ACHA
 Author: A.Ziesing
 Date created: 22.11.2019
 Datum: GDA94 / MGA zone 55



NGH

4 December 2019

CEO
Nyngan Local Aboriginal Land Council
102 Pangee St,
NYNGAN NSW 2825

nynganlalc@bigpond.com



NGH

Dear Sir or Madam,

Re: 19-754 Request for registration of Aboriginal stakeholders for proposed Yarren Hut Solar Farm, Nyngan NSW

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NGH Pty Ltd

PO Box 5464

WAGGA WAGGA NSW 2650

Or Via Email to: amy.z@nghconsulting.com.au

Yours sincerely,

Amy Ziesing

Heritage Consultant

02 6923 1548

NGH Pty Ltd

ABN: 31 124 444 622 / ACN: 124 444 622



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Yarren Hut Solar Farm Proposal Area Map

- Legend**
-  Development Site
 -  Lot Boundary
 -  Transmission Line

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Author: A.Ziesing
Date created: 22.11.2019
Datum: GDA94 / MGA zone 55



NGH

4 December 2019

The Manager
Native Title Services Corporation
PO Box 2105,
STRAWBERRY HILLS NSW 2012

information@ntscorp.com.au



Dear Sir or Madam,

Re: 19-754 Request for registration of Aboriginal stakeholders for proposed Yarren Hut Solar Farm, Nyngan NSW

NGH Pty Ltd (NGH) has been engaged by BayWA r.e. (45 Denison St, Bondi Junction, NSW 2022) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) for the proposed 25 Megawatt (MW) solar farm covering 92 hectares of Lot 21 DP704061 in the Bogan Shire LGA (see attached figure). Access to the proposal area will be gained from a private access track of the Mitchell Highway. The purpose of this consultation is to provide an opportunity for Aboriginal community stakeholders to assist in the preparation of the ACHA; be involved in consultation regarding Aboriginal cultural heritage; and be involved in the assessment of sites and management of potential impacts to those sites which may result from the proposal.

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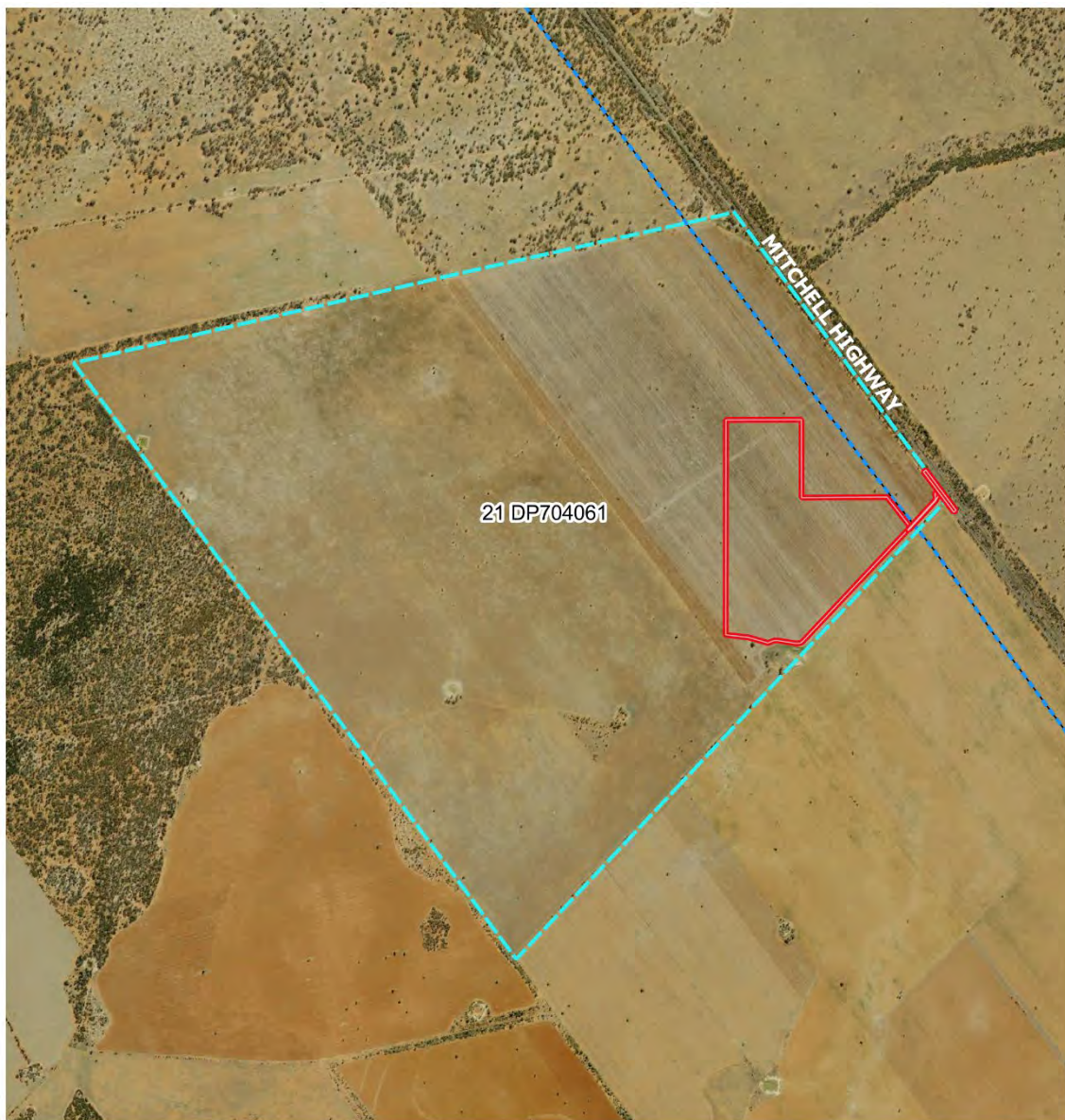
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Author: A.Ziesing
Date created: 22.11.2019
Datum: GDA94 / MGA zone 55



NGH

4 December 2019

The Registrar
Office of the Registrar
PO Box 5068
Parramatta NSW 2124
adminofficer@oralra.nsw.gov.au



Dear Sir or Madam,

Re: 19-754 Request for registration of Aboriginal stakeholders for proposed Yarren Hut Solar Farm, Nyngan NSW

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Or Via Email to: amy.z@nghconsulting.com.au

Yours sincerely,

Amy Ziesing
Heritage Consultant
02 6923 1548
NGH Pty Ltd
ABN: 31 124 444 622 / ACN: 124 444 622





NGH



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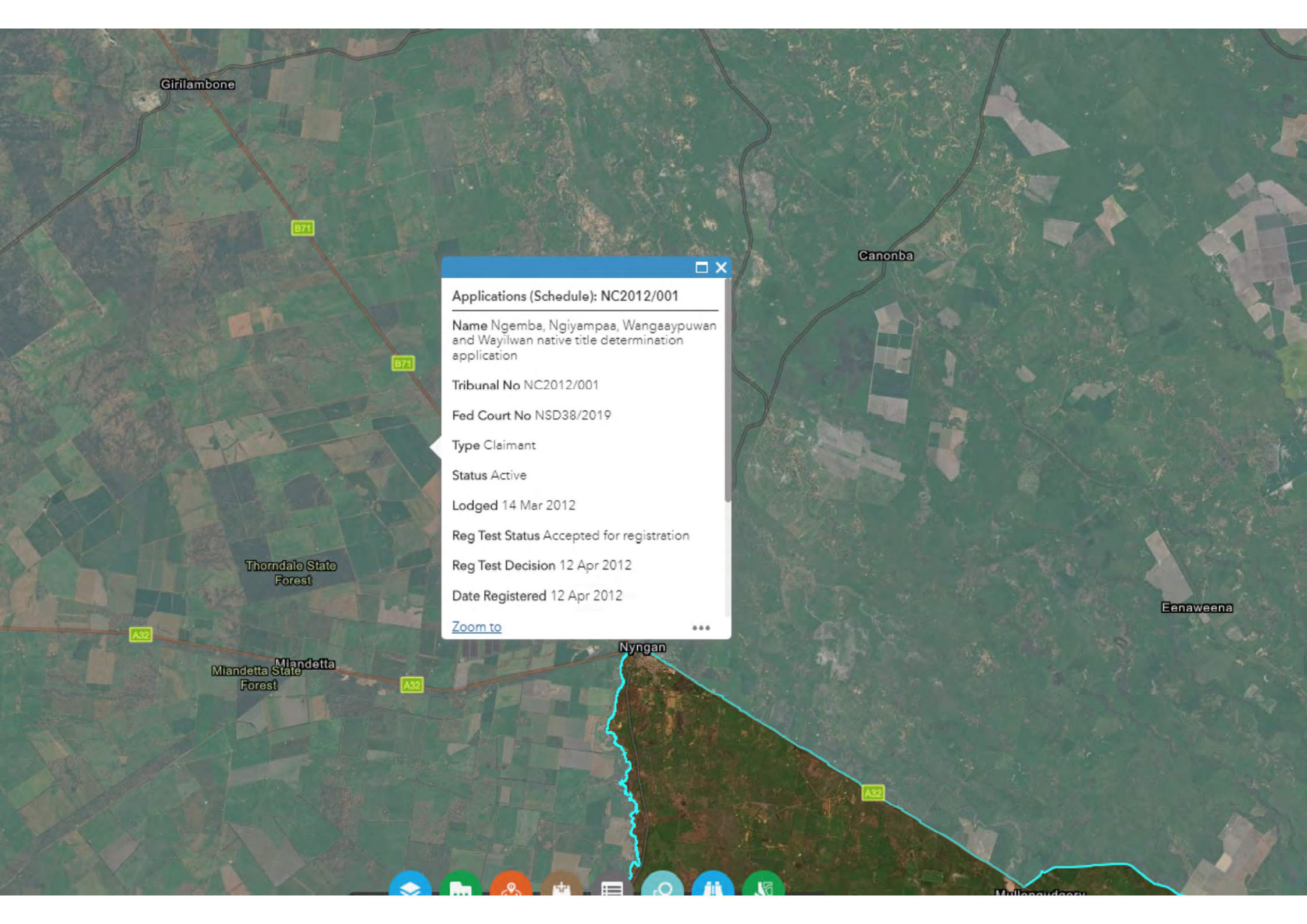


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NGH



Girilambone

B71

B71

Canonba

Eenaweena

Thorndale State Forest

Miandetta State Forest

A32

Nyngan

A32

Applications (Schedule): NC2012/001

Name Ngemba, Ngiyampaa, Wangaaypuwan and Wayilwan native title determination application

Tribunal No NC2012/001

Fed Court No NSD38/2019

Type Claimant

Status Active

Lodged 14 Mar 2012

Reg Test Status Accepted for registration

Reg Test Decision 12 Apr 2012

Date Registered 12 Apr 2012

[Zoom to](#)

...



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Sunday 15th December
Tickets on sale from 2.00pm
Draw starts at 3.00pm
Lots of Christmas Goodies to be won

FM6634443

NYNGAN RSL CLUB
It's Our Shout Members Christmas Party
Eat drink Merry
Saturday 14th December
at 5.00pm Music, Food & Refreshments
Jingle Mingle
Courtesy Bus pickups and drop off's
RSVP Friday 13th December

FM6634435

NYNGAN RSL CLUB
106 Pangee Street, Nyngan
Ph 02 6832 1102 | Fax 02 6832 2035
Email: nynganrslclub@bigpond.com
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Subs for 2020 are now DUE
Associate Members \$11.00
Pensioners \$5.50
If your not a Member why not join and enjoy the Clubs facilities
New Associate Members \$13.00
New Pensioners \$7.50
Payment can be made at the Club

Public Notices

Notification for registration of interest for Aboriginal stakeholders

NGH Pty Ltd (NGH) has been engaged by BayWA r.e. (45 Denison St, Bondi Junction, NSW 2022) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) for the proposed 25 Megawatt (MW) solar farm covering 92 hectares of Lot 21 DP704061 in the Bogan Shire LGA. Access to the proposal area will be gained from a private access track off the Mitchell Highway.

The purpose of this consultation is to provide an opportunity for Aboriginal community stakeholders to assist in the preparation of the ACHA, be involved in consultation regarding Aboriginal cultural heritage, and be involved in the assessment of sites and management of potential impacts to those sites which may result from the proposal.

In order to fulfil the requirements set out in the OEH *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*, NGH Pty Ltd is seeking interested Aboriginal parties who hold cultural knowledge of the assessment area to register their interest in the consultation process for the project and to assist in the determination of cultural significance of any Aboriginal objects or places located therein.

Registrations should be provided in writing to:

NGH Pty Ltd
PO Box 5464
WAGGA WAGGA NSW 2650

Or via email to: amy.z@nghconsulting.com.au

Closing date for registration is **18th of December 2019**.

Those registering an interest will be contacted to discuss the project further. Those who do register are advised that their details will be provided to BCD (formerly OEH) and the Local Aboriginal Land Council, unless they specifically advise in writing that their details are not to be forwarded.

Irrigation

WANTED Water Licences along the Bogan River. Phone 0448 697 218. www.agtrader.com.au

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Position Vacant - Care Co-ordinator

Bogan Shire Council has a part-time Care Co-ordinator position available within our Medical Centre for maternity relief coverage. This is a fantastic opportunity to join a local leading employer that provides a career path for those wanting to work in the health sector. Bogan Shire Council seeks employees with a willingness to contribute to a team environment and promote customer service excellence.

The Care Co-ordinator will provide professional day to day business support to the Medical Centre's team, ensuring the efficient and effective function of the Bogan Shire Medical Centre's services, organising appointments, promoting Medical Centre services, welcoming patients to the Medical Centre and providing courteous and timely customer service and exceptional standard of care to our patients.

The Care Co-ordinator position is a 10 month part-time contract.

Hours of work are 21 hours/week between 8.30am and 5.30pm, Monday to Friday. Additional hours may be required subject to operational needs.

Salary Range: Grade 4: \$30.34 - \$35.12 per hour, with 9.5% super. Other conditions outlined on Council's website.

Further information and details about the position are available from Council via the website www.bogan.nsw.gov.au, by calling (02) 6835 9000 or in person from 81 Cobar Street, Nyngan NSW. Please refer to the selection criteria in the Position Description and Application Guide for how to apply.

Applications, including a full CV, covering letter and addressing the selection criteria should be marked 'Confidential - Recruitment' and addressed to:

The General Manager
Bogan Shire Council
PO Box 221, Nyngan NSW 2825.

Applications close 12.00pm Friday 6 December 2019.

Bogan Shire Council is an equal opportunity employer. Selection is determined by merit to ensure employment of the best person for the job.

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to get your business in front of new potential customers.

Nyngan Observer



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Fiveways Legal Pty Ltd Gabrielle Holmes, LL.B. PRIMed

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Property sales & purchases, Mediation

Tottenham: Tues to Thurs
Nyngan: By Appointment Mon or Fri
64 Umang St, Tottenham | Ph: 1300 735 370
www.fivewayslegal.com.au
ACN 626 216 555

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Place your classified ad anytime 24/7
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6 December 2019

Marilyn Carroll-Johnson
Director
Corroboree Aboriginal Corporation
PO Box 3340,
ROUSE HILL NSW 2155



Dear Marilyn,

Re: 19-754 Request for registration of Aboriginal stakeholders for proposed Yarren Hut Solar Farm, Nyngan NSW

NGH Pty Ltd (NGH) has been engaged by BayWA r.e. (45 Denison St, Bondi Junction, NSW 2022) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) for the proposed 25 Megawatt (MW) solar farm covering 92 hectares of Lot 21 DP704061 in the Bogan Shire LGA (see attached figure). Access to the proposal area will be gained from a private access track of the Mitchell Highway. The purpose of this consultation is to provide an opportunity for Aboriginal community stakeholders to assist in the preparation of the ACHA; be involved in consultation regarding Aboriginal cultural heritage; and be involved in the assessment of sites and management of potential impacts to those sites which may result from the proposal.

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Or Via Email to: amy.z@nghconsulting.com.au

Yours sincerely,

Amy Ziesing

Heritage Consultant

02 6923 1548

NGH Pty Ltd

ABN: 31 124 444 622 / ACN: 124 444 622



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Yarren Hut Solar Farm Proposal Area Map

- Legend**
-  Development Site
 -  Lot Boundary
 -  Transmission Line

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 Author: A.Ziesing
 Date created: 22.11.2019
 Datum: GDA94 / MGA zone 55



NGH

6 December 2019

John Shipp
79 Thompson Street,
DUBBO NSW 2830



Dear John,

Re: 19-754 Request for registration of Aboriginal stakeholders for proposed Yarren Hut Solar Farm, Nyngan NSW

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Amy Ziesing

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Author: A.Ziesing
Date created: 22.11.2019
Datum: GDA94 / MGA zone 55



NGH

6 December 2019

Trevor Robinson
PO Box 73,
PEAK HILL NSW 2869



Dear Trevor,

Re: 19-754 Request for registration of Aboriginal stakeholders for proposed Yarren Hut Solar Farm, Nyngan NSW

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 Author: A.Ziesing
 Date created: 22.11.2019
 Datum: GDA94 / MGA zone 55



NGH

6 December 2019

Chairperson
Wiradjuri Interim Working Party
PO Box 73,
PEAK HILL NSW 2869



Dear Sir and Madam,

Re: 19-754 Request for registration of Aboriginal stakeholders for proposed Yarren Hut Solar Farm, Nyngan NSW

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Amy Ziesing

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ABORIGINAL HERITAGE INVESTIGATION METHODOLOGY

Yarren Hut Solar Farm, Nyngan NSW

January 2020

Project Number: 19-754

DOCUMENT VERIFICATION

Project Title: Yarren Hut Solar Farm, Nyngan NSW

Project Number: 19-754

Project File Name: 19-754 Yarren Hut Solar Farm Methodology 16012020

Revision	Date	Prepared by	Reviewed by	Approved by
Draft	16/01/2020	Amy Ziesing	Ali Byrne	Ali Byrne

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Spring Hill QLD 4000 **T.** (07) 3129 7633

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Tugun QLD 4224 **T.** (07) 3129 7633

E. ngh@nghconsulting.com.au

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Hamilton NSW 2303 **T.** (02) 4929 2301

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ABN 31 124 444 622 ACN 124 444 622

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TABLE

Table 4-1. Breakdown of previously recorded Aboriginal sites within 20 km of the proposal area 9

ACRONYMS AND ABBREVIATIONS

AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
BayWa	Bay Wa r.e. Projects Australia Pty Ltd
BCD	Biodiversity and Conservation Division (formerly OEH)
DPIE	Department of Planning, Infrastructure and Environment
EIS	Environmental Impact Statement
Ha	Hectares
Km	Kilometres
LALC	Local Aboriginal Land Council
LGA	Local Government Area
M	Metres
NGH	NGH Pty Ltd
NPW Act	National Parks and Wildlife Act 1974 (NSW)
NPWS	National Parks and Wildlife Service
NSW	New South Wales
OEH	(NSW) Office of Environment and Heritage, formerly Department of Environment, Climate Change and Water (see also BCD)
PAD	Potential Archaeological Deposit
RAP(s)	Registered Aboriginal Parties
SEARs	Secretary's Environmental Assessment Requirements
SSD	State Significant Development

1 INTRODUCTION

NGH Pty Ltd (NGH) was commissioned by Bay Wa r.e. Projects Australia Pty Ltd (BayWa) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) for a proposed 28 MegaWatt (MW) solar farm, approximately 17 kilometres (km) north west of Nyngan, NSW (Figure 1-1). The subject land includes Lot 21 DP704061 covering 1204 hectares (ha) of flat cultivated land of which 92 ha would be subdivided for the proposed solar farm development. The development site is within the Bogan Shire Local Government Area (LGA) and is bound by the Mitchell Highway to the east and private pastoral land to the south, west and north (Figure 1-2). The land is currently utilised for primary production including cropping and grazing.

The proposal infrastructure includes solar arrays, trackers, modules, inverters, a substation / switchyard underground cabling, security fencing and a cable run to connect the solar farm to the Essential Energy 810/4 66 kV feeder.

BayWa are seeking to undertake work that may impact Aboriginal heritage objects. The proposal is listed as a State Significant Development (SSD) and the Secretary's Environmental Assessment Requirements (SEARs) which will be issued for the project will likely identify Aboriginal heritage as a specific issue to be addressed by the Environmental Impact Statement (EIS). In anticipation of this, NGH has commenced undertaking an ACHA in accordance with relevant guidelines.

Throughout the project, the following codes and guides will be followed in relation to Aboriginal heritage assessment.

- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW*
<http://www.environment.nsw.gov.au/resources/cultureheritage/20110263ACHguide.pdf>
- *Code of Practice for Archaeological Investigations of Objects in NSW*
<http://www.environment.nsw.gov.au/resources/cultureheritage/10783FinalArchCoP.pdf>
- *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*
<http://www.environment.nsw.gov.au/resources/cultureheritage/commconsultation/09781ACHconsultreq.pdf>

The above codes and guides are issued by the Biodiversity and Conservation Division (BCD, formerly OEH) and are followed for most Aboriginal heritage assessments. The approach being undertaken by NGH will therefore be consistent with other heritage assessments undertaken in NSW.

An Aboriginal Heritage Impact Permit (AHIP) issued under the NPW Act would not be required for the project because, in accordance with Part 4 of the EP&A Act, a consent for SSD projects is issued by the Minister for Planning and includes conditions relating to Aboriginal heritage as required. However, Aboriginal heritage must be considered in the EIS including assessment under relevant guidelines as outlined above and conducting adequate consultation with the Aboriginal community.

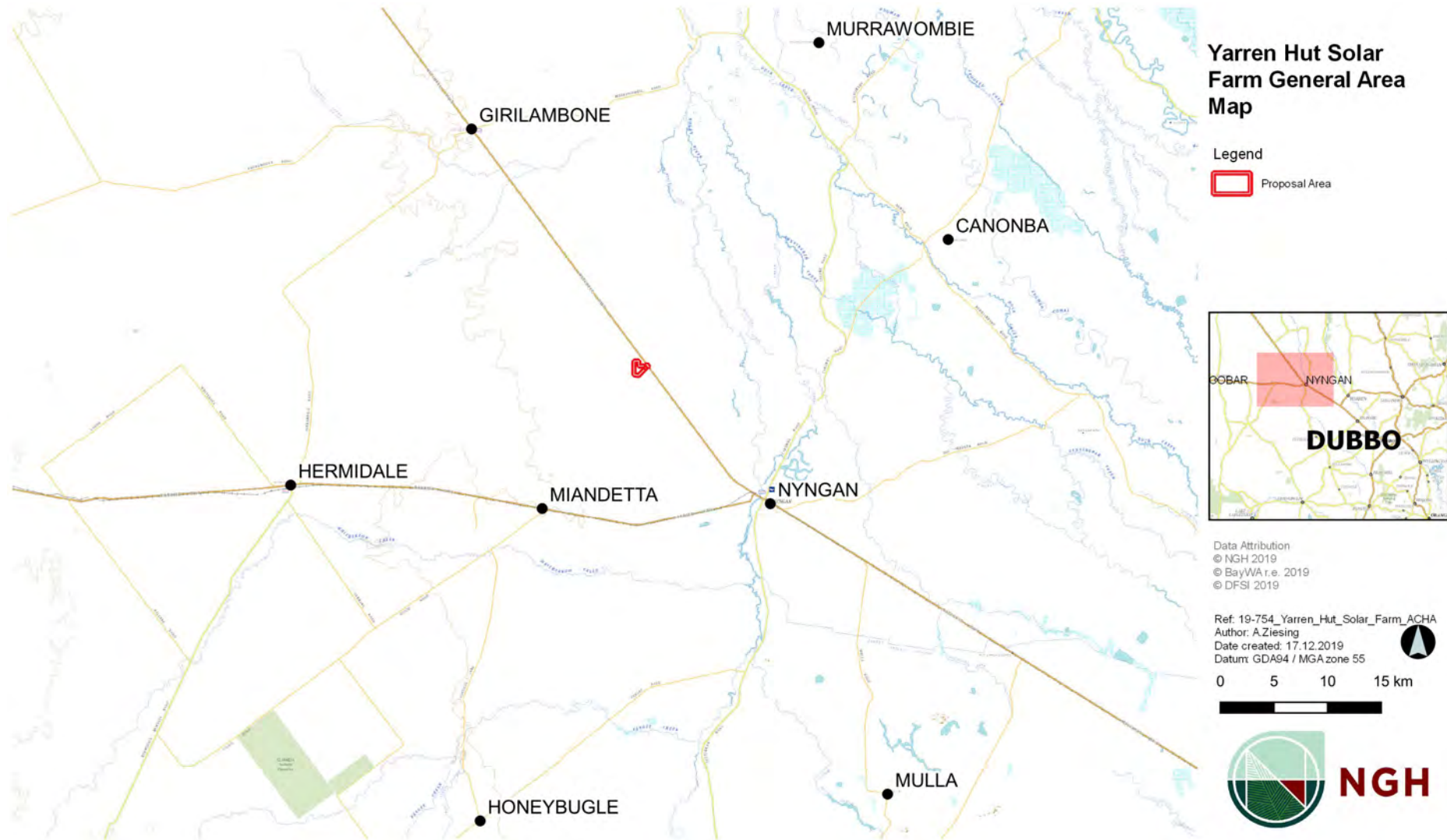


Figure 1-1 General Area Map Surrounding the Yarren Hut Solar Farm Proposal Area.

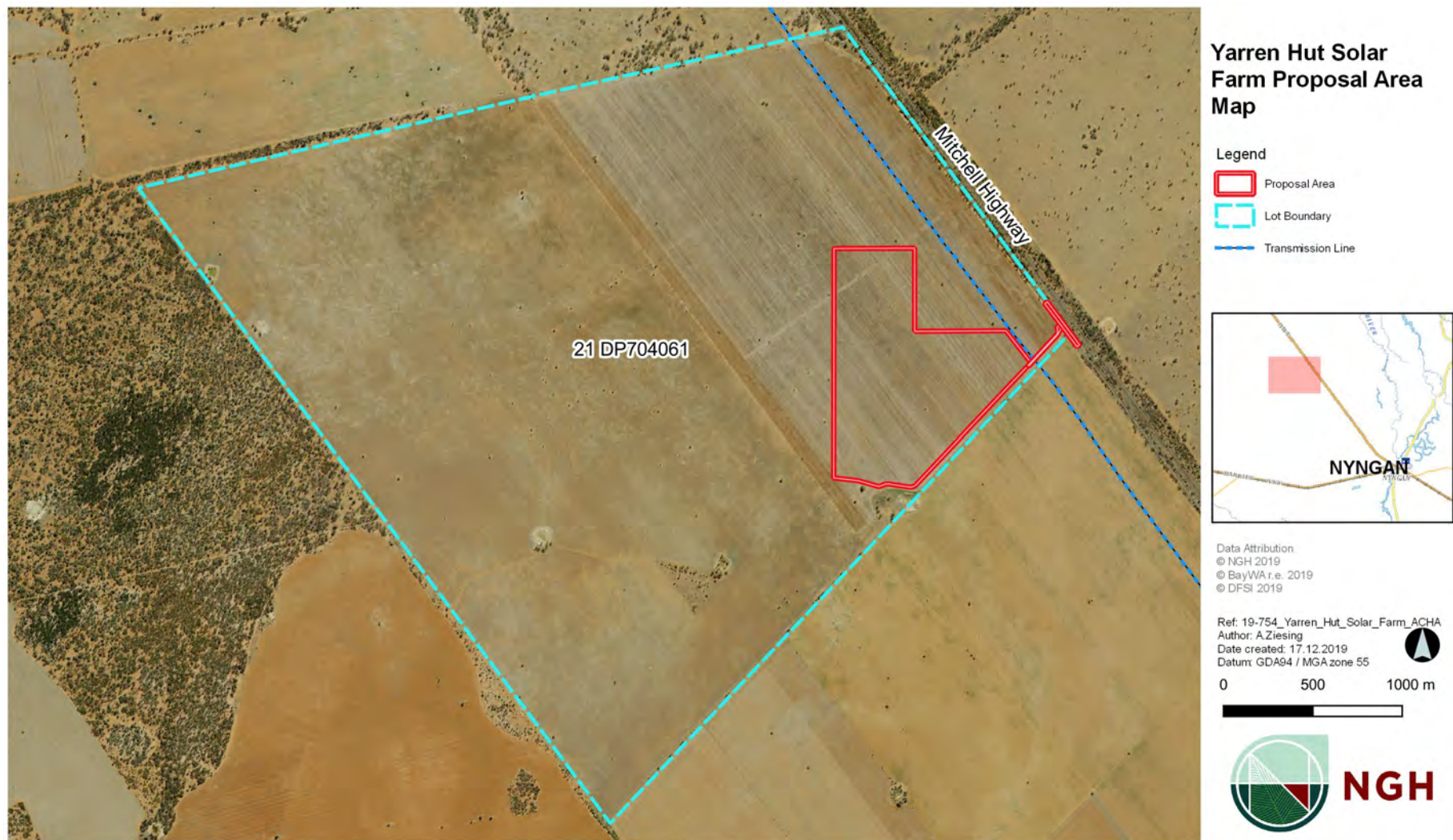


Figure 1-2 Yarren Hut Solar Farm Proposal Area Map.

2 ABORIGINAL CONSULTATION

NGH mean to consult with the Aboriginal community throughout the project, in line with the requirements outlined in the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*. To date, consultation has included the following steps:

- Advertising for interested parties by placing a public notice advertisement in the *Nyngan Observer* on 4 December 2019;
- Writing to relevant agencies, including BCD, advising of the project and seeking known interested parties;
- Writing to any additional identified parties by BCD (or other agencies) seeking their interest;
- Providing a survey assessment methodology to all Registered Aboriginal Parties (RAPs) in January 2020 including background to the proposal, a summary of previous archaeological surveys and the proposed survey assessment methodology for the proposal.

NGH are now providing this Aboriginal heritage investigation methodology for comment to all parties who have registered an interest in the project.

Following the end of this period for comment, the methodology will be sent to BCD for comment and their information.

The fieldwork component will proceed with representatives from the RAPs. Once fieldwork is completed, a draft ACHA report will be written, and this will be provided to RAPs for comment.

The final ACHA report will incorporate information provided by the Aboriginal community and a copy will be provided to each party for their records.

3 BACKGROUND INFORMATION

3.1 PROJECT BACKGROUND

The Yarren Hut Solar Farm proposal area has been selected due to excellent solar exposure, access to major roads and the grid transmission network. The use of the site would be based on a lease agreement between the proponent and the landowner for the life of the project.

The proposal involves the construction of a ground-mounted photovoltaic solar farm which would generate approximately 28 MW alternating current (AC) of renewable energy.

The design of the proposed development is somewhat adaptable and would be refined to avoid adverse impacts where feasible, and to minimise/mitigate environmental impacts if avoidance is not possible. The design would consider the results of consultation with relevant Aboriginal stakeholders, and the ACHA and EIS when prepared.

The proposal would consist of the following components:

- Single-axis tracker photovoltaic solar panels mounted on steel frames (approximately 84,000 PV solar panels).
- Underground electrical conduits and cabling to connect the arrays and the inverters and transformers.

- Inverters, transformers and electrical conduits.
- Onsite substation / switchyard.
- 66 kV electrical transmission line to connect the proposal to the existing Essential Energy Nyngan to Bourke transmission line.
- Site office, site compound, vehicle parking areas, access tracks and perimeter fencing.
- Site access from the Mitchell Highway.

The proposal is expected to operate for 50 years. The construction phase of the proposal planned to commence in Q3 2021 and would last 6 months. After the initial operating period, the solar farm would either be decommissioned, removing all above-ground infrastructure and returning the site to its existing land capability, or upgraded with new PV equipment. The proposed development has an estimated capital investment cost greater than \$30 million. The proposal is therefore classified as SSD under Part 4 of the EP&A Act.

4 ARCHAEOLOGICAL BACKGROUND

4.1 ABORIGINAL HERITAGE SITE REGISTER SEARCH

A search of relevant heritage registers for Aboriginal sites and places provides an indication of the presence of previously recorded sites. It is to be noted that a register search is not conclusive, as it reflects only those areas that have been surveyed and that sites recorded are added to the register. As a starting point the search will indicate whether any sites are known within or adjacent to the investigation area. The Aboriginal Heritage Information Management System (AHIMS) provides a database of Aboriginal heritage sites previously registered within an area. The results of the search are valid for 12 months for the purposes of a heritage assessment.

On 17 December 2019 a search of the AHIMS database was undertaken over an area of approximately 20 km x 20 km centred over the project area (from latitude -31.5879, longitude 146.8862 to latitude -31.3267, longitude 147.2156 with a buffer of 200 m). The AHIMS Client Service Number was 473364. There were 28 Aboriginal sites recorded within this search area and no declared Aboriginal Places. Table 4-1 below shows the breakdown of the site types and Figure 4-1 shows the extent of the search area in relation to the proposed solar farm site.

Table 4-1. Breakdown of previously recorded Aboriginal sites within 20 km of the proposal area

Site Type	Number
Modified Tree (Carved or Scarred)	17
Artefact	10
Ceremonial Ring (Stone or Earth); Modified Tree (Carved or Scarred)	1
TOTAL	28

Based upon these search results the main site type in this area are modified trees (carved or scarred (60.7%)), followed by artefact sites (35.7%), and a ceremonial bora ring with a carved tree (3.6%). No sites fall within the current assessment area and the closest known sites are over 12 km from the proposed solar farm boundary. These include a modified tree on the Mitchell Highway (AHIMS# 26-3-0002), a ceremonial bora ring and carved tree on the Bogan River (AHIMS# 27-1-0003) and two artefact sites (AHIMS# 27-4-0247 and 27-4-0248) to the west of Nyngan. All other remaining sites within the 20 km search area are centred around Nyngan and have been identified based on targeted surveys for proposed development.

None of these registered sites will be impacted by the proposed Yarren Hut Solar Farm development.

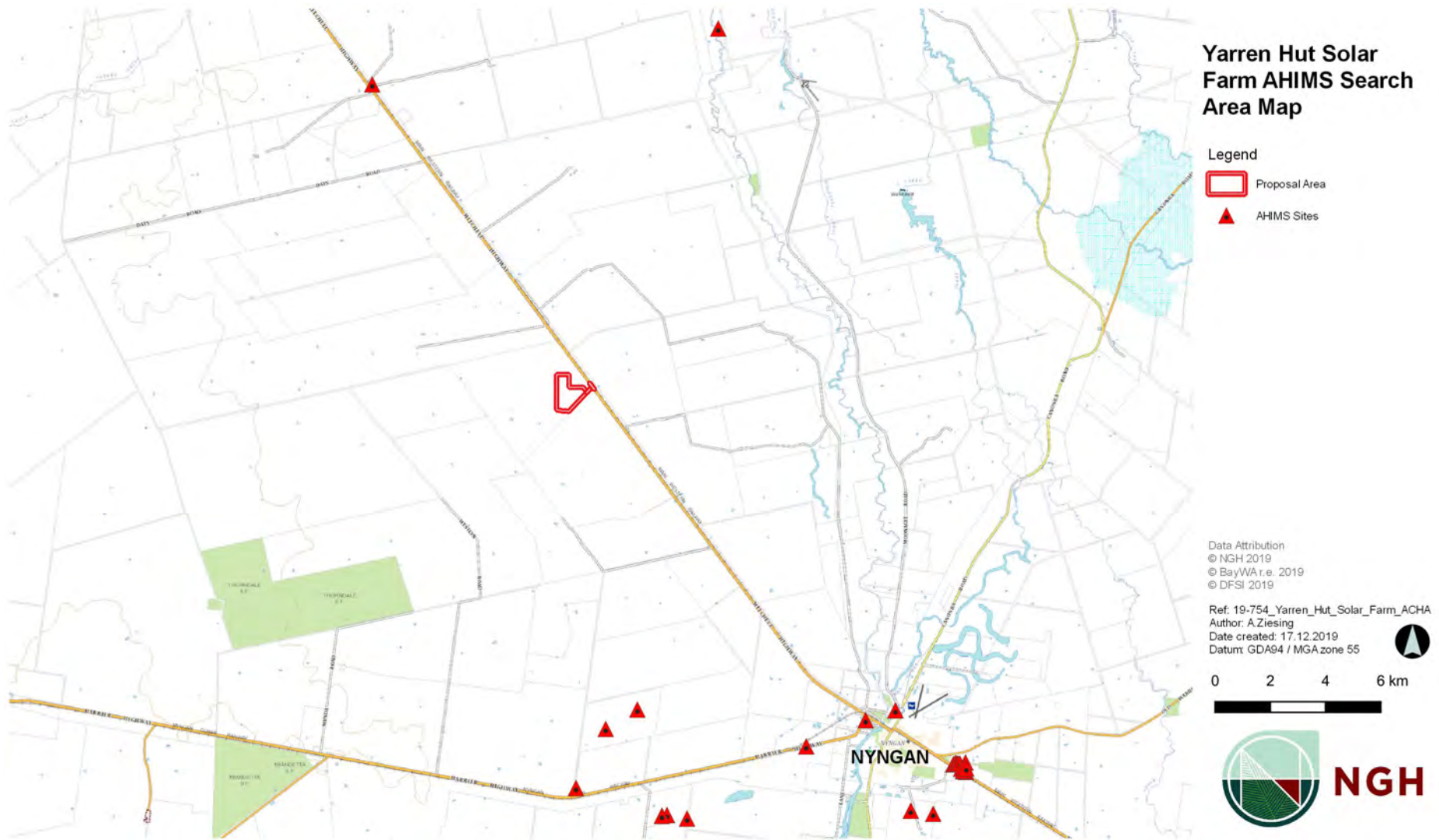


Figure 4-1 AHIMS Sites within a 20 km radius of the Yarren Hut Solar Farm proposal area.

4.2 REGIONAL ARCHAEOLOGICAL STUDIES

Aboriginal people have occupied what we now know as the Australian continent for at least 40,000 years and perhaps 60,000 years and beyond (Mulvaney and Kamminga 1999, Hiscock 2007). No regional synthesis of the archaeology has been completed for the Bogan Shire region, but several archaeological surveys have been completed for the Nyngan area. The following are summaries of those archaeological survey reports that have been completed in the wider Orana region, as well as locally to Nyngan. It should be noted that such studies are primarily driven by development and infrastructure requirements and therefore there are often a number of biases associated with the information provided.

Pearson (1981) completed an archaeological investigation of the upper Macquarie for his PhD, covering an expansive area to the east of the current assessment area containing mountainous landforms. The study included research of historical sources and ethnographic information. Additionally, three rock shelters were excavated, and comparative analysis was undertaken of this data against other known archaeological sites in the area (as cited in Dibden 2012). Pearson highlighted patterns of Aboriginal occupation through analysis of 40 artefact scatters and four sample locations. These were grouped into occupation sites and non-occupation sites, including scarred or carved trees, ceremonial sites, grinding grooves and burial sites. The following site prediction model was developed based on the analysis:

- The distance of sites from water ranged from 10 to 500 m, with larger sites being located closer to water sources;
- Site location was dependent on good soil drainage, views overlooking watercourses, level ground, shelter and elevation above cold air;
- Most sites were identified in places originally containing open woodlands to provide a fuel source;
- Burial sites and grinding grooves were situated close to habitation areas, but in areas of sufficient soil depth and penetrability (burials) and where suitable outcropping sandstone occurred (grinding grooves);
- Ceremonial sites such as earth rings were situated away from campsites;
- Stone arrangements were also located away from campsites, in isolated places, and were more likely to be located on small hills or knolls, although they can also occur on flat land;
- Scarred or carved trees were distributed with no obvious patterning other than their proximity to watercourses, and in frequent camping locations;
- Quarry sites were located where known outcrops of suitable raw material were available; and
- Aboriginal campsites were rarely used for longer than three nights. If sites contained extensive archaeological deposit, Pearson suggested they probably resulted from a series of short visits over time (as cited in Dibden 2012).

Koettig (1985) undertook a comprehensive study relating to Aboriginal occupation of the Dubbo area, which although located 170 km south east of the current assessment area provides general information for the wider region in relation to site type, location and associated environmental setting. Koettig surveyed a variety of landform units and stream orders within three geographic zones and proposed that:

- Aboriginal sites will be distributed throughout all landscape units with artefact scatters and scarred or carved trees being the most common site types; and
- The size of a site and its location is predominantly determined by environmental and social influences, which for the latter can often not be predicted. Koettig produced modelling of site type and site location in relation to environmental factors, including:

- *Proximity to water:* despite sites being identified in a variety of landforms, including hills and ridges distant from water, the most extensive and complex sites were located close to permanent water.
- *Availability of food resources:* The most abundant and varied food resources were identified along major watercourses, resulting in larger campsites, but seasonal food resources were also noted distant to permanent water.
- *Geological formation:* Certain site types occur in particular geological settings. Grinding grooves are located where there are suitable sandstone outcrops, while quarries are found where there is a useable and accessible stone resource. Burials are most likely to be found in sandy deposits such as those that exist on alluvial flats (as cited in Dibden 2012).

Smith (1988) completed an archaeological survey for the proposed 132kV transmission line from Dubbo to Nyngan. The entire 168 km length of proposed transmission line and 45 m easement width was surveyed for Aboriginal and historic sites. A total of 20 Aboriginal sites were identified across the survey area. The sites include 13 artefact scatters and one scarred tree, as well as six isolated finds. Four previously recorded sites were also reinspected to ensure that they were not to be impacted by the proposed development. All isolated find sites were outside of the proposed easement; however, nine of the artefact scatters lay either wholly or partially within the development area. It was recommended that the power poles not be erected within 50 m of the site boundaries. Avoidance and demarcation of the scarred tree site was also recommended to prevent inadvertent clearing.

Kelton (1995) completed an archaeological survey for the proposed North Copper Mine near Girilambone, approximately 26 km north east of the current assessment area. A previous investigation over part of the Copper Mine was completed by Nicholson (1989), recording one scarred tree and two isolated finds. The scarred tree was identified along the Mitchell Highway and the two isolated artefacts were found adjacent to ephemeral creeklines. A systematic survey was also completed by Nicholson (1990) for the proposed water pipeline corridor connecting the Copper Mine site to the Bogan River. A further five artefact scatters were identified along the banks of the river and on the eastern side of the mine prospect at the location of three proposed settling ponds, which were associated with an ephemeral watercourse. The highest artefact densities recorded by Nicholson were at the Bogan River sites. When Kelton completed the survey in 1994, the subject site was divided into areas of high impact (Area A) and nil to low impact (Area B). All areas were surveyed however wider transects were employed across land designated to have lower impact from the proposed mine expansion. Following the completion of the survey, the size of both areas was significantly reduced. Three landform units were identified by Kelton and each was assigned a predicted archaeological sensitivity. These micro land systems included lower flat areas located around drainage soaks and lower sections of ephemeral creeks; and higher relief areas between ephemeral creeks and broad drainage systems, both of which were assigned moderate archaeological sensitivity. Rocky, gravelly high ridges and peaks were also designated as a landform unit, but these areas were assigned low archaeological sensitivity. A total of 34 hearths, 27 scarred trees (including two possible carved trees) one artefact scatter and four isolated finds were identified during the field survey. Out of these 66 sites, 59 were to be impacted by the proposed mine expansion works.

Gaynor (2000) completed an archaeological survey for a proposed railway goods yard in the centre of Nyngan. No Aboriginal sites were identified during the survey, although two plant species utilised by Aboriginal people in the past were noted, including Nardoo plants and Kurrajong trees; however, none of this vegetation exhibited evidence of cultural modification.

Purcell (2010) conducted a desktop assessment of two alternative locations for solar farms at Nyngan. The Bogan riverine landscape was identified as containing a number of landform categories frequently associated with Aboriginal occupation. These features include relic drainage lines and tributaries which occur on the floodplain away from the main river channel (as cited in Dibden 2012).

Dibden (2010) assessed a solar project situated immediately east of Nyngan. Two isolated artefacts were recorded during the survey. The artefact density and archaeological significance of the sites was assessed as very low.

Dibden (2012) completed an ACHA for the proposed Nyngan Solar Plant approximately 10 km west of Nyngan and 12 km south of the current assessment area. Three isolated artefacts (Coreen SU1/L1, Coreen SU1/L2 and Coreen SU2/L1) were identified in eroded ground exposures during the survey, which maintained moderate to high effective survey coverage throughout. This resulted in Dibden assessing the proposal area as having low archaeological status and potential. Undetected and subsurface stone artefacts were also predicted to be present across the site, but in extremely low densities.

Artefact Heritage Services (2016) completed an Aboriginal and historic heritage assessment for a proposed open cut scandium mine, including Tailings Storage Facility (TSF), a Waste Rock Emplacement and processing plant, approximately 17 km west of Nyngan. No Aboriginal sites or areas of archaeological potential were identified during this investigation and the site was assessed as being of low potential.

Wilcox (2015) completed an Aboriginal and historical due diligence assessment for the proposed Off-Steam Water Storage facility in Nyngan. These works were proposed in order to improve the security of Cobar's water supply. Two scarred trees were recorded in association with the proposed Site 5 storage ponds. Two historic survey marker trees were also identified within the proposed Site 5 pipeline alignment. It was recommended that Site 1 be the preferred location for the proposed works as this location presented the fewest heritage constraints. If this could not be achieved, then avoidance and demarcation of the scarred tree sites was recommended.

4.2.1 Summary of Aboriginal Land Use

The results of the previous archaeological studies indicate that, while some areas were found to contain significant Aboriginal sites such as scarred trees or high-density artefact scatters, these were generally located within close proximity to the Bogan River or its high order tributaries. Furthermore, significant and regionally rare sites such as rock shelters, quarries and grinding grooves are only found where suitable geological formations are present. Studies which have been undertaken in similar landscapes to the current project area, including those located more than several kilometres from a permanent water source, have identified limited evidence of land use or occupation by past Aboriginal people. This is likely due to the absence of potable water and associated resources required for food, medicine and implement production.

The current assessment area may still have been used in a transitory way by people when travelling through the wider landscape, resulting in low levels of artefact discard. Any areas of remnant old growth trees are considered to potentially contain evidence of cultural modification; however, the desktop assessment suggests that the proposal area has been extensively cleared of native vegetation with only scattered paddock trees remaining and higher densities present along the Mitchell Highway. It is also considered unlikely that areas of potential archaeological deposit (PAD) will be present in the current assessment area which comprises low-lying, flat land with shallow, highly disturbed soils and is not associated with any permanent or ephemeral watercourses.

5 ASSESSMENT METHODOLOGY

5.1 AIMS

Broadly, the aims of the survey for the proposal are to:

- Survey the proposal area on foot to identify and record any Aboriginal heritage objects or sites identified;
- Consult with the Aboriginal community about the project;
- Determine any areas of potential Aboriginal heritage sensitivity;
- Assess the impact of the proposal on heritage sites/objects;
- Assess the significance of any sites, and
- Develop recommendations for options on how to manage identified Aboriginal heritage sites and objects.

5.2 METHODOLOGY OUTLINE

The following is an outline of the steps that would be involved in completing the Aboriginal Cultural Heritage Assessment for the project area. This forms the methodology of the assessment.

- Consultation with Aboriginal parties.
 - Notification of the project and registration of interest – obtain names of people who may hold cultural knowledge through written requests to relevant bodies and authorities and advertising in the local paper. **Completed.**
 - Provide details of the project and the heritage assessment methodology to registered parties for comment. **This document.**
 - Seek any information on whether there are any known places or objects of cultural significance to the Aboriginal people. **This document.**
 - Involvement of selected representatives of the registered parties in survey fieldwork.
 - Provide opportunity for the registered parties to review and comment on the draft cultural heritage assessment.
 - Incorporate any comments from Aboriginal parties into the cultural heritage assessment.
- Review of background information relevant to the subject area. Request an Aboriginal Heritage Information Management System (AHIMS) register search to identify the location of previously recorded sites and review any archaeological reports or site records of the immediate area. **Completed.**
- Undertake field assessment in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010). It is our intention to assess the areas of previously recorded sites and determine if additional unrecorded Aboriginal objects are present.

Field survey will involve the following elements:

- Walking across the project area in a systematic way to identify Aboriginal heritage objects. The survey would aim to provide enough surface coverage to be confident of assessing the area for the presence of Aboriginal sites.
- Recording all Aboriginal heritage objects using standard archaeological techniques including: location, environmental context, extent, content, disturbance level.
- Photograph sites.

- Record stone artefacts with standard techniques including: type, raw material, dimensions, note of technical attributes.
- Undertake a significance assessment of any Aboriginal cultural objects, sites or places.
- To the extent possible with information available, assess the impact of the proposed development on the archaeological sites and devise ways to avoid or mitigate any impact, if possible.
- Prepare a draft ACHAR. The report will be a cultural heritage assessment of the subject area and include the results of the steps outlined above. The draft ACHAR will be provided to registered Aboriginal parties for comment.
- Prepare final report. Consider all comments and finalise report.

5.3 REPORTING

A report detailing the results of the survey and assessment will be prepared. The report will be structured to provide the following information:

- Introduction
- Aboriginal consultation
- Project setting
- Archaeological setting
- Archaeological methods
- Results
- Discussion
- Significance assessment
- Conclusions

The report will include descriptions of sites, artefact attributes and photographs. A draft copy of the report will be provided to the registered Aboriginal parties for comment. The report will then be finalised.

6 CULTURAL KNOWLEDGE

As part of assessing the potential impact of the development on Aboriginal cultural values, NGH is seeking any information from the local Aboriginal community that will assist in this process. The significance of any archaeological sites identified within the project area will be assessed for their scientific values. We would also seek the input from the Aboriginal community on the cultural values of any sites found.

In addition, we also seek information about any other values that may be attributed to the land identified for development.

Information can be held confidentially if that is required, although such information would be used in providing an assessment of any impacts to Aboriginal values by the project.

Information should be forwarded to the project heritage consultant, Amy Ziesing (details in section 7. below), either prior to the field survey, at the time of the field survey, or prior to the finalisation of the report.

7 PERSONNEL

This cultural heritage assessment will be managed by the NGH heritage consultant, Amy Ziesing.

Contact details for Amy are:

Postal: 35 Kincaid Street, WAGGA WAGGA NSW 2650

Email: amy.z@nghconsulting.com.au

Phone: 02 6923 1548

8 NEXT STEPS

As part of the consultation program, set out in the Consultation Requirements, this methodology is provided to the registered Aboriginal parties. There is a 28-day period for comment on the methodology. If any registered Aboriginal party has any comments about the project, the cultural heritage assessment or has additional cultural information that may be of assistance, please forward them to Amy Ziesing (details included above in Section 7).

The closing date for comments on this methodology is COB on **14th of February 2020**.

9 REFERENCES

- Artefact Heritage Services, 2016. *Nyngan Scadium Project: Heritage Assessment*. Report to EMC Metals Australia Pty Ltd.
- Dibden, J. 2010. *Proposed Nyngan Photovoltaic Solar Farm Indigenous Archaeological and Cultural Heritage Assessment*. A report to nghenvironmental.
- Dibden, J. 2012. *Nyngan Solar Plant Aboriginal Cultural Heritage Assessment Report*. A report to NGH Environmental on behalf of AGL Energy Limited.
- Gaynor, P., 2000. *An archaeological survey of the railway goods yard at Nyngan Central Western NSW*. A report to the Property Division Country South West State Rail Authority of NSW.
- Kelton, J., 1995. *An Archaeological Survey of the Proposed Girilambone North Copper Mine, Near Girilambone, Western NSW*. A report to Girilambone Copper Company Pty Ltd.
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- Mulvaney, J. and J. Kamminga 1999. *Prehistory of Australia*. Allen and Unwin: St Leonards.
- Nicholson, A., 1989. *Archaeological Survey of Proposed Mine Sites Near Nyngan, NSW*. Unpublished NPWS report.
- Nicholson, A., 1990. *Archaeological Survey of facilities associated with Mining Development near Nyngan, NEw SOuth Wales*. Unpublished NPWS report.
- OEH, 2010a. *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*.
- OEH, 2010b. *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales*.
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- Purcell, P. 2010. *Aboriginal Cultural Heritage Assessment Rapid Response Desktop Assessment*.
- Smith, L.J., 1988. *Archaeological Survey of the Dubbo to Nyngan 132kV transmission line: Final Report*. A report to the Electricity Commission of NSW.
- Wilcox, M., 2015. *Aboriginal and historical Due Diligence Archaeological Assessment: Nyngan Off-Steam Water Storage*. A report to NSW Water Solutions, NSW Public Works Department of Finance, Services and Innovation.

From: [Ali Byrne](#)
To: boganac@bigpond.com
Cc: [Amy Ziesing](#)
Subject: 19-754 Yarren Hut ACHA
Date: Thursday, 14 May 2020 2:33:00 PM
Attachments: [19-754 Yarren Hut Solar Farm ACHA Draft V1.0.pdf](#)
[image001.png](#)

Hi Lesly,

Please find attached the draft ACHA for the proposed Yarren Hut Solar Farm development for your review and comment. Thank you for providing us with your report. If you would prefer a hard copy of our report to be mailed to you, please let me know.

We look forward to your response by Friday 12 May 2020. Please do not hesitate to contact us if you have any questions.

Kind regards,
Ali

ALEXANDRA BYRNE
SENIOR HERITAGE CONSULTANT
BA(Archaeology)
T. 02 4929 2301 **D.** 4917 3971 **M.** 0428 747 615
E. ali.b@nghconsulting.com.au
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Hamilton NSW 2303



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WWW.NGHCONSULTING.COM.AU

Due to precautions around COVID-19, I am currently working from home. Email and mobile are best to contact me. Thanks for your patience.

From: [Ali Byrne](#)
To: [Corroboree Aboriginal Corporation](#)
Cc: [Amy Ziesing](#)
Subject: 19-754 Yarren Hut ACHA
Date: Thursday, 14 May 2020 2:33:00 PM
Attachments: [image001.png](#)
[19-754 Yarren Hut Solar Farm ACHA Draft V1.0 CAC.pdf](#)

Hi Marilyn,

Please find attached the draft ACHA for the proposed Yarren Hut Solar Farm development for your review and comment.

We look forward to your response by Friday 12 May 2020. Please do not hesitate to contact us if you have any questions.

Kind regards,
Ali

ALEXANDRA BYRNE
SENIOR HERITAGE CONSULTANT
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Due to precautions around COVID-19, I am currently working from home. Email and mobile are best to contact me. Thanks for your patience.

APPENDIX C REPORT FROM BOGAN ABORIGINAL CORPORATION

YARREN HUT



ABORIGINAL CULTURAL ASSESSMENT

PROPOSED SOLAR FARM

27TH FEBRUARY 2020

TITLE

An Assessment of, Aboriginal Cultural Heritage Values Nyngan NSW 2825.

Property Name. "Yarren Hut"
Parish. Parish of Nyngan County of Oxley
Address. Mitchell Highway, Nyngan, NSW, 2825

Owner. Mr J Carter
Lessee Bay War.e. Projects Australia Pty Ltd (BayWa)
ACHA NGH Pty Ltd

Project No 19-754

Location S 31*26.799' (9.00 am)
E 147*04.482'
Elevation 167m

Author

Name. Mrs Lesly Ryan
CEO/Sites Officer
Bogan Aboriginal Corporation (BAC)
Representing:
Nyngan Local Aboriginal Land Council (Nyngan LALC)
Address. (PO Box 345) 46 Nymagee St,
Nyngan NSW 2825

Contact details. (eg: phone, e-mail)
Mob 0419418851, Phone 0268321750
boganac@bigpond.com

Date of assessment. 27th February 2020

Final report (Due Date) 12th March 2020

Note: Due date is 14 days after the date of assessment indicated above.

MAPS OF STUDY AREA

Include a map (or maps) to the scale 1:25,000, showing the following:

- The boundaries of the assessment (survey) area.
- The extent of the proposed works
- All areas surveyed and assessed
- Location of sites, both current and new.

Background

Why is an inspection required?

There has been interest shown in the establishment of a Solar Farm in the Nyngan area.

Describe the natural elements of this site (eg: soil, rock, water) Photographs included.

The area is at the South East end of the property. It has been ploughed heavily over the years since the Eighties (1980). The area is mainly red sandy loam. There are dams away from the proposed area inspected with one full and the other dry of water. There has been plenty of limestone drawn from the dams when they have been desilted, although these are not on the proposed area.

Describe the plants that are here (eg: trees, shrubs, groundcover) and how thick they are (eg: dense, moderate, sparse). Photographs included.

Since some recent rain ground cover is sparse in the area an odd Salt Bush, Windmill Grass with a few other clumps of native grasses which is very sparse. The grasses are starting to come on since the recent rain Nyngan received. A few Box Trees and clumps of Wilga Trees line outside the fence facing Mitchell Highway these are not in the proposed area

A description of the development/impact,

The area totalling 92 ha, will be used for a Solar Farm, This will benefit rural communities and will have no impact on any previous farming. The proposed land had been farmed since the early eighties, stock has been feeding from it in dry seasons.

Who did the inspection?

Name(s) Mrs Lesly Ryan, Bogan Aboriginal Corporation, Sites Officer & Nyngan Local Aboriginal Land Council Rep. Mr Brendon Weldon, Native Title & Nyngan LALC Rep.

Local Government area,

Bogan Shire Council

Any relevant background information. Please include information of prior use by Aboriginal people. (Traditional, Historical & Current)

There are no sites where the proposed area intends to be developed. Although there were markings on (Scarred) tree outside of the border of the proposed area. There was no wildlife about. (Eg: Kangaroos, Lizards, Birds or Emus.) The ground has been constantly farmed (Ploughed) for numerous years any signs would have been destroyed.

Methodology

Please provide the date(s) of the inspection.

27th February 2020

What areas were inspected?

Whole of the project area. Including a 10 meter buffer outside the proposed area on the southern, eastern, western and northern sides of the proposed project.

How were the area(s) inspected? (eg: on foot, or by vehicle).

The vegetation was low and very patchy Mrs Lesly Ryan Sites Officer Bogan AC, Ali Byrne (Archaeologist) Mr Mike Skinner (Corroboree Aboriginal Corporation) and myself walked and drove the whole of the proposed area of the project.

Please describe the condition of the study area. (ie: level of disturbance and degree of visibility. (Compare vegetation cover to bare ground).

The area consisting of sandy red loam and the vegetation was very scarce in proposed area. New grasses were coming up due to the recent rain. The visibility was clear and you could see in the distance the project area that was being inspected.

Any photographs of study area and other relevant information may be attached here.

Attached

Results

What was found?

There were no significant Sites located on the area. A few Scarred Trees were located over the fence line but not in the area being investigated for the proposed Solar farm. Two (2) small rocks were sited and identified as an isolated rocks from a hearth but there were no hearths within an approximately area of 30 meters buffer. At the western end compass reading 274W S 31°27.18' E 147°3.52' (1.15 pm) a Hearth was located under a tree, this was not in the proposed area to be Solar farm.

Are any of these sites sensitive to the local Aboriginal community?
(Please circle) **Yes**

If yes, please indicate level of sensitivity, by circling below.

Low

Med

High

Are there known or recorded sites in the survey area?

AHIMS (Aboriginal Heritage Information Management System)

No. Nothing has never been recorded previously with AHIMS and there was nothing located on the proposed area.

If yes, were you able to relocate them?

(Please circle)

N/A

Please outline your recommendations for the management of the site(s).

Recommendations

There are no recommendations for the management of the propose area. There is nothing that is significant to the Aboriginal people, they may have walked through there to obtain access to the river/water although an isolated hearth was located just out of the proposed area. It is recommended that a fence be erected within a 5 - 10 meter radius to stop any dislodgement of the hearth being washed away or disruption from animals. The area had been cropped/farmed for numerous years anything that may have been there has long disappeared.

Note: *Refer to your results and cover issues relating to the impact on Aboriginal Heritage, and include strategies for future management.*

References

If you have made a reference to any reports, articles, or books in this report, you must list them here. This also applies to Aboriginal knowledge holders you may have spoken to.

AHIMS

Appendices

Attach relevant maps, additional photographs, site plans, here.



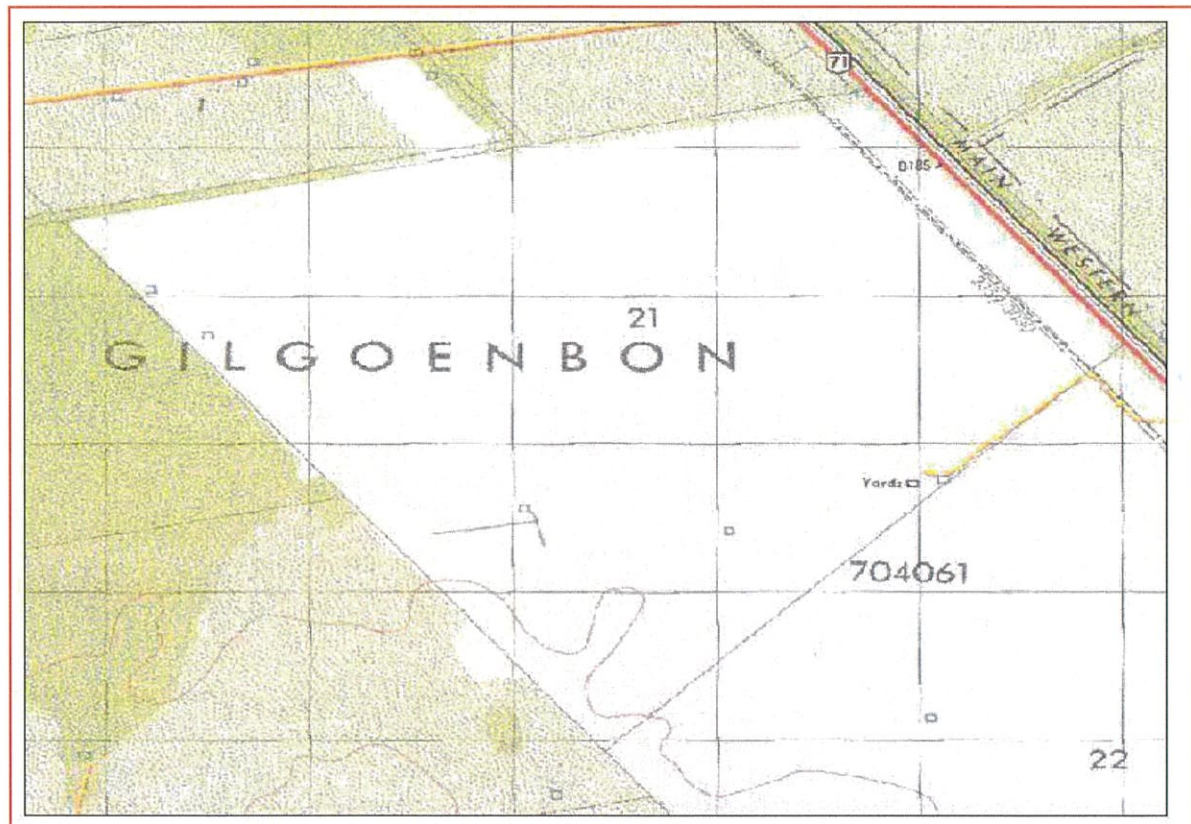
Bogan Aboriginal Corporation
46 Nymagee St PO BOX 345
NYNGAN New South Wales 2825
Attention: Lesly Ryan
Email: boganac@netxp.com.au

Date: 01 March 2020

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 21, DP:DP704061 with a Buffer of 200 meters, conducted by Lesly Ryan on 01 March 2020.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0 Aboriginal sites are recorded in or near the above location.

0 Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the [NSW Government Gazette \(http://www.nsw.gov.au/gazette\)](http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not to be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

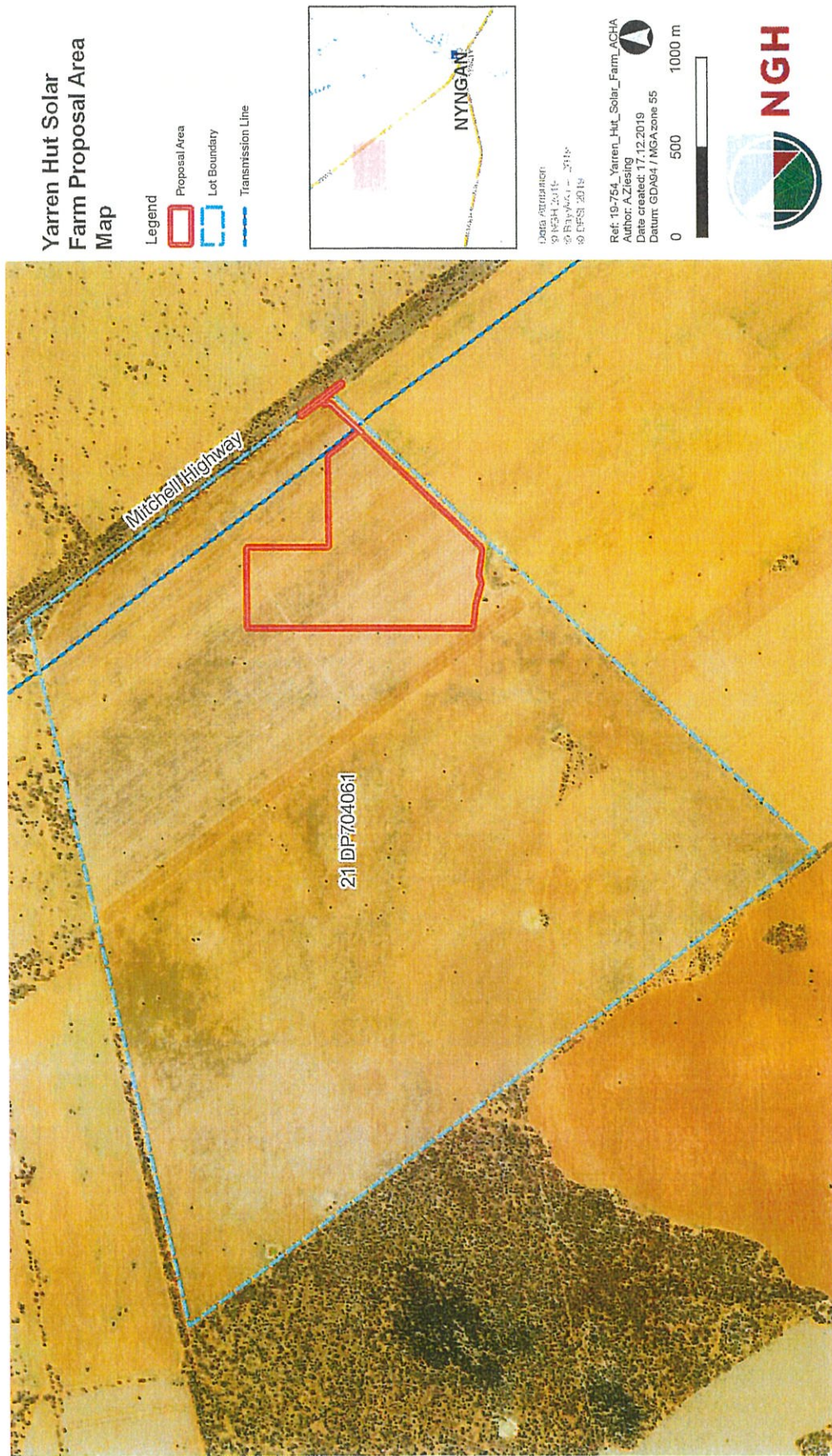


Figure 1-2 Yarren Hut Solar Farm Proposal Area Map.

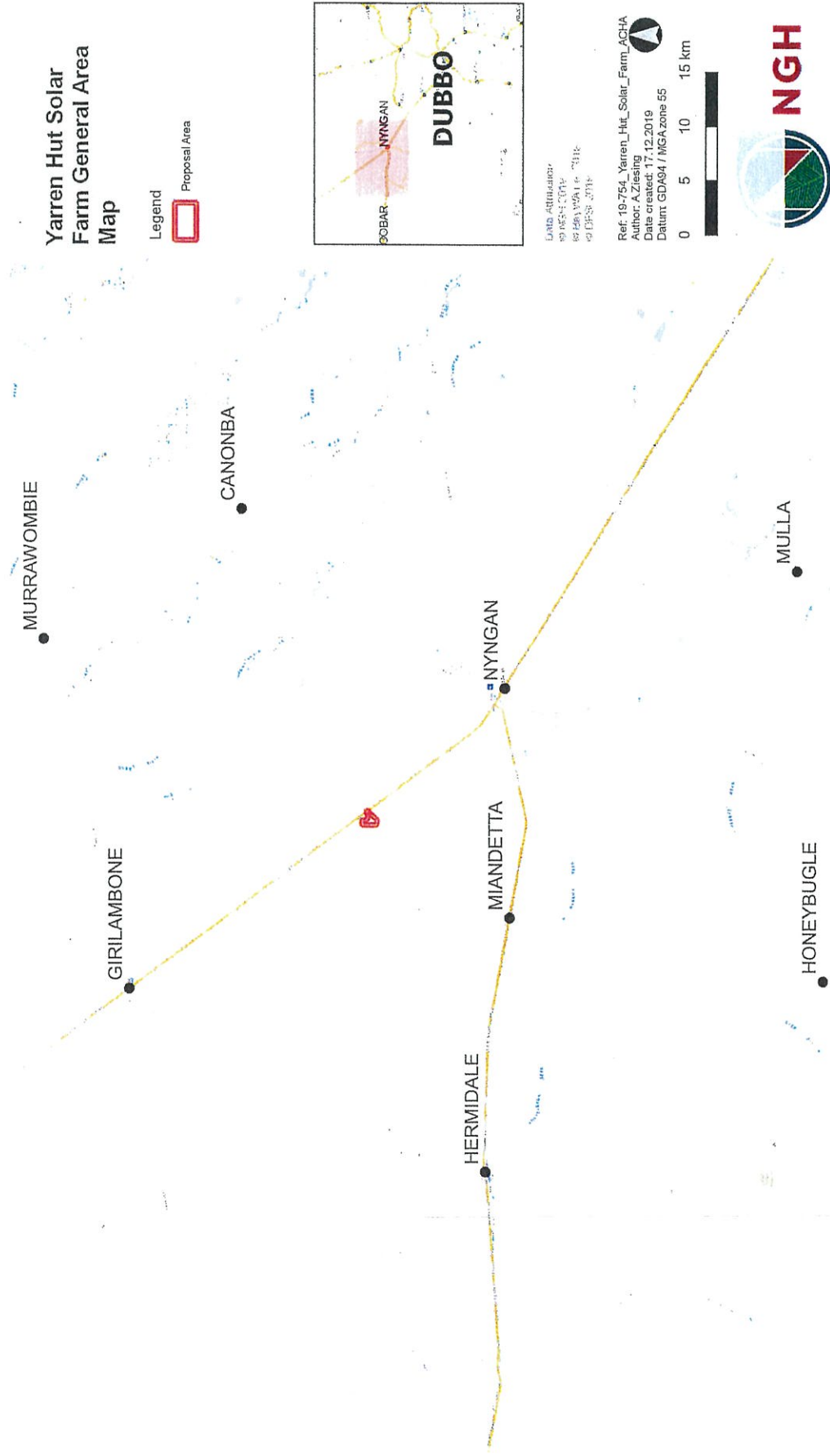
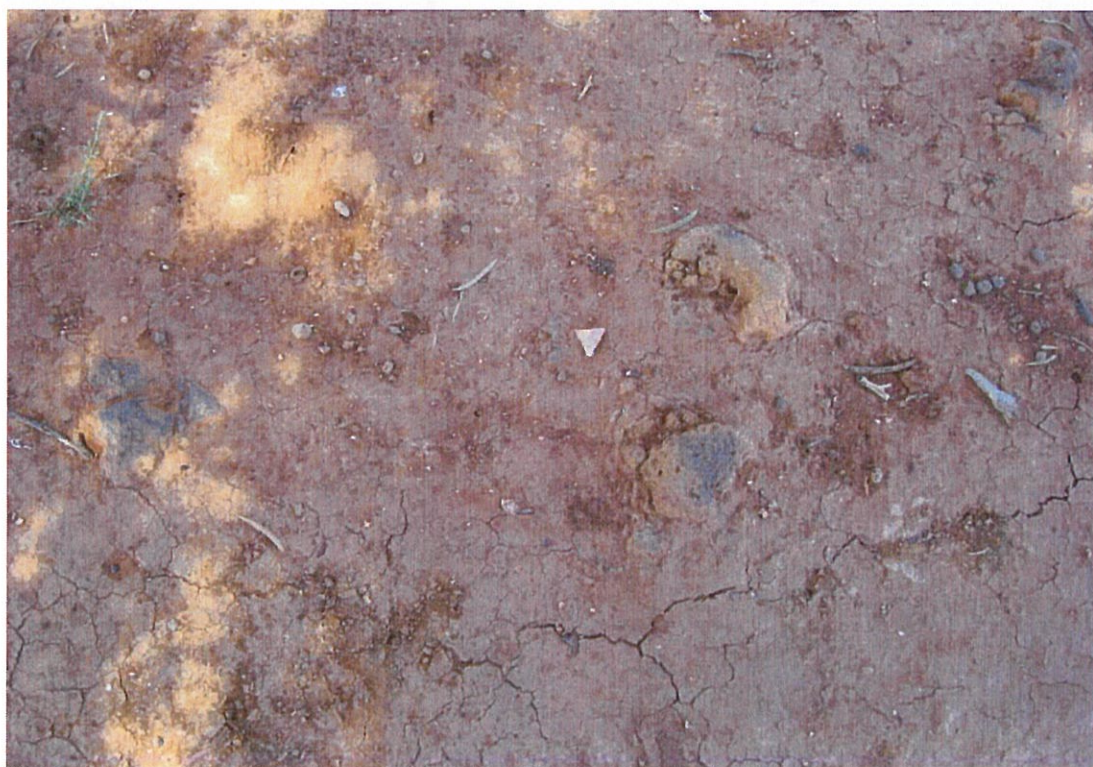


Figure 1-1 General Area Map Surrounding the Yarren Hut Solar Farm Proposal Area.



Hearth S 31*27.18' E 147*3.52'

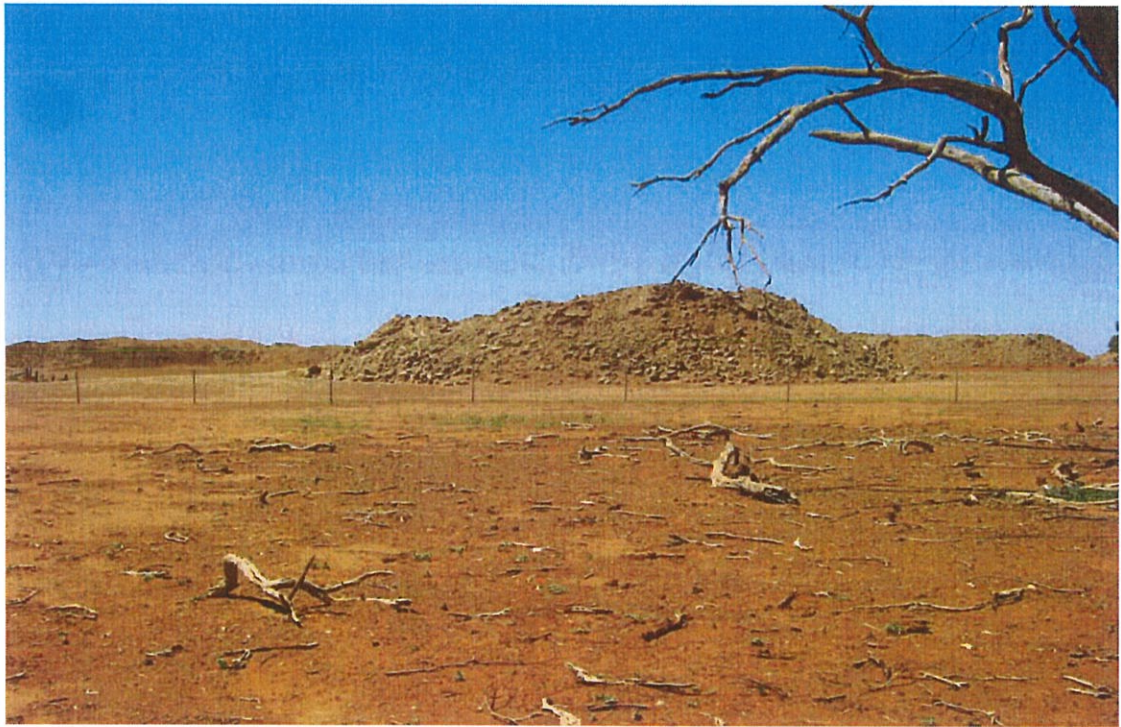
274 West





Hearth S 31*27.18' E 147*3.52' 274 West

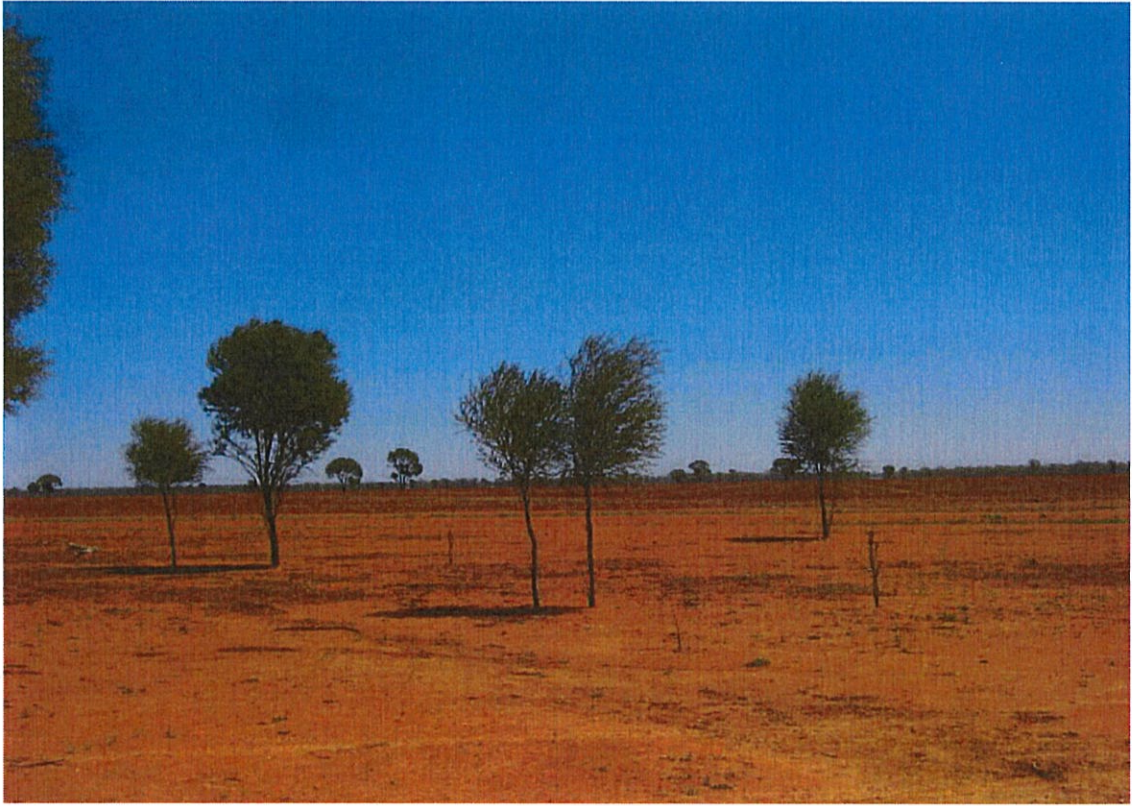




Ground Water Tank



Landscape



Landscape





Small Scarred Tree
S 31*25.56' E 147*3.41'

154 South East



Scarred Tree
S 31*25.56'
E 147*3.41'





Scarred Tree

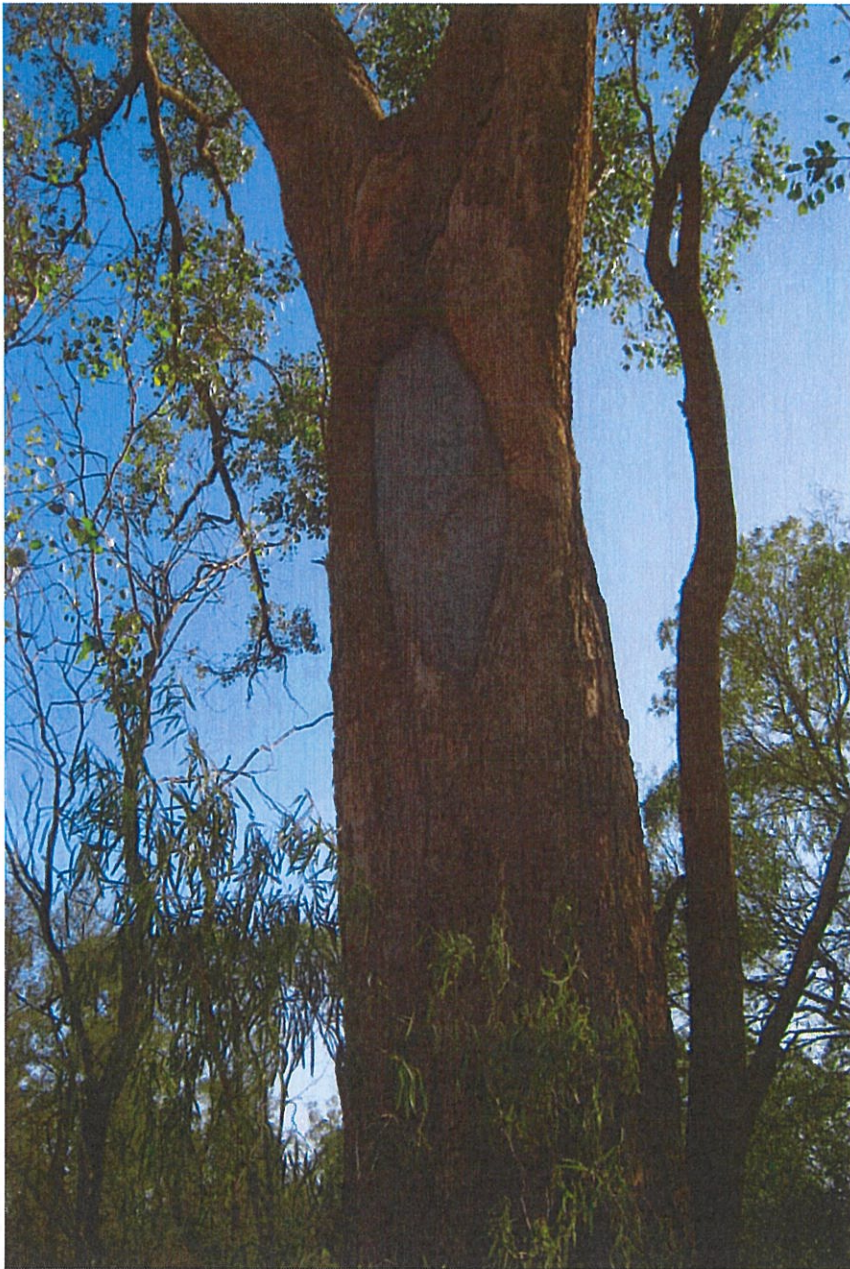
S 31*26.12' E 147*3.57'



Scarred Tree

Scarred Tree

S 31*26.33' E 147*4.16'



Scarred Tree S 31*26.35' E 147*4.18'



Isolated Rock





Ploughed Paddocks





Quartz

