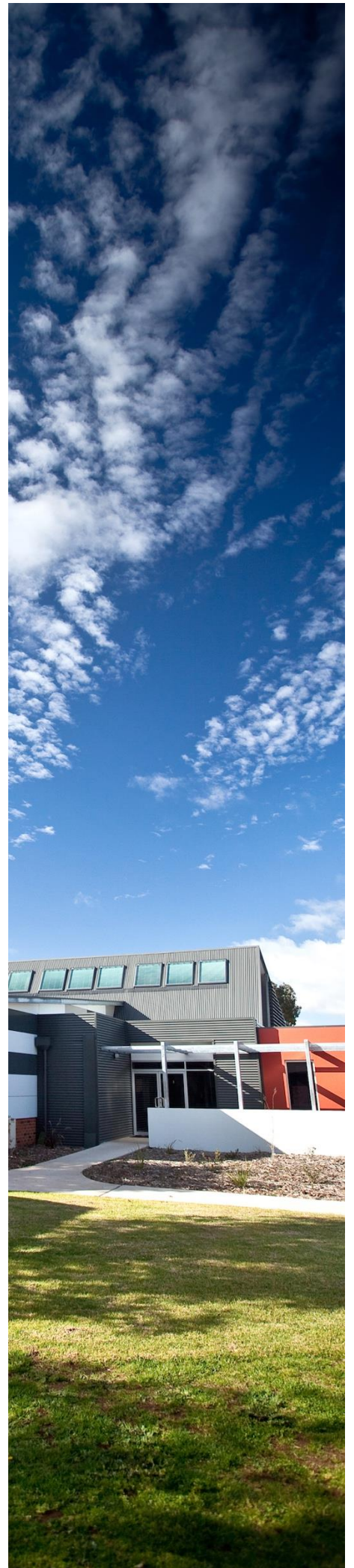




Statement of Environmental Effects

Taronga Western Plains Zoo
Platypus Conversation Centre
Obley Road, Dubbo NSW 2830

(Our Reference: 36409-PR01_A)
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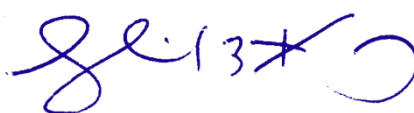


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Project Name:	Taronga Western Plains Zoo Platypus Conservation Centre
Client:	Taronga Conservation Society Australia
Project No.	36409
Report Reference	36409-PR01_A
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Prepared by:	Reviewed by:
	
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LIST OF CONTENTS

1	INTRODUCTION.....	1
1.1	Background	1
1.2	Proponent	1
1.3	Consultant.....	1
2	EXISTING ENVIRONMENT.....	2
2.1	Location and Title.....	2
2.2	Land Use.....	6
2.3	Topography	6
2.4	Visual Amenity	6
2.5	Flora and Fauna.....	6
2.6	Noise Environment.....	6
2.7	Flooding and Stormwater.....	7
2.8	Bushfire	7
2.9	Services	7
2.10	Access and Traffic	8
2.11	Heritage	8
3	PROPOSED DEVELOPMENT	9
4	LAND USE ZONING	11
5	PLANNING CONSIDERATIONS	12
5.1	Biodiversity Conservation Act 2016	12
5.1.1	Is the development likely to significantly affect threatened species?	12
5.1.1.1	Section 7.3 Test.....	12
5.1.1.2	Section 7.4 Test.....	13
5.1.1.3	Declared Area of Outstanding Biodiversity Value	13
5.1.2	Biodiversity Development Assessment Report.....	13
5.2	Fisheries Management Act 1994.....	14
5.2.1	Applicability.....	14
5.2.2	Is the development likely to significantly affect threatened species, population or ecological community?.....	14
5.3	Environmental Planning & Assessment Act 1979.....	15
5.3.1	Section 4.15(1)	15
5.4	Environmental Planning Instruments.....	16
5.4.1	State Environmental Planning Policies (SEPP 55)	16
5.4.1.1	SEPP No.55 – Remediation of Land	16
5.4.2	Dubbo Local Environmental Plan 2011	17
5.4.2.1	Zone Objectives & Land Use Table.....	17
5.4.2.2	Flood Planning.....	17
5.4.2.3	Natural Resource - Biodiversity	18
5.4.2.4	Earthworks	18
5.4.2.5	Groundwater Vulnerability.....	19

5.5	Draft Environmental Planning Instruments.....	19
5.6	Dubbo Development Control Plan (DCP) 2013.....	19
5.7	Any Planning Agreement entered into.....	19
5.8	Any Matters Prescribed by the Regulations	19
5.8.1	Dark Sky Planning Guidelines	19
5.8.1.1	Factors Affecting the Observing Environment	20
5.8.1.2	Good Lighting Design Principles	20
5.9	Any Likely Impacts of the Development.....	20
5.9.1	Context & Setting	20
5.9.2	Access, Transport & Traffic.....	21
5.9.3	Visual Amenity.....	21
5.9.4	Water	21
5.9.5	Noise	21
5.9.6	Natural Hazards.....	22
5.9.6.1	Bush Fire	22
5.9.7	Social & Economic Impacts in the Locality	23
5.9.8	Construction.....	23
5.10	Suitability of the Site for the Proposed Development.....	23
5.10.1	Does the proposal fit in the locality?.....	23
5.10.2	Are the site attributes conducive to development?.....	23
5.11	The Public Interest	23
6	CONCLUSION	24
7	REFERENCES.....	25

APPENDICES

Appendix A – Development Plans

Appendix B – Biodiversity Assessment

Appendix C – Bushfire Management

Appendix D – Aboriginal Cultural Heritage Due Diligence Assessment

1 INTRODUCTION

1.1 Background

Barnson Pty Ltd has been engaged by Zoological Park Board NSW (Taronga Conservation Society Australia) to prepare information in support of a Development Application (DA) for a Platypus Conversation Centre at Taronga Western Plains Zoo (TWPZ), Obley Road, Dubbo NSW 2830. Refer to Development Plans in **Appendix A**.

The subject land is located south of the city of Dubbo and has a property area of approximately 282 Hectares. It is the intention of TWPZ to develop this subject area to form a science and education precinct which is already supported by the existing education centre and soon the Wildlife Hospital (currently under construction).

Based on the application being made by the Zoological Park Board NSW, who is considered to be a Crown authority, the application should be dealt with as a Crown development in accordance with Division 4.6 of the Environmental Planning and Assessment Act, 1979 and relevant clauses of the Environmental Planning and Assessment Regulation 2000.

The site is zoned SP3 Tourist Zone pursuant to the provisions under the *Dubbo Local Environmental Plan 2011*. The proposed development being an exhibit and also a building to house and protect platypi is considered ancillary to the existing Zoo operation.

This application consists of:

- A completed development application form; and
- One (1) electronic copy of this statement, including plans and supporting documents.

1.2 Proponent

The proponent for the DA is the Zoological Park Board NSW (Taronga Conservation Society Australia)

1.3 Consultant

Barnson Pty Ltd

Jim Sarantzouklis

'Riverview Business Park'

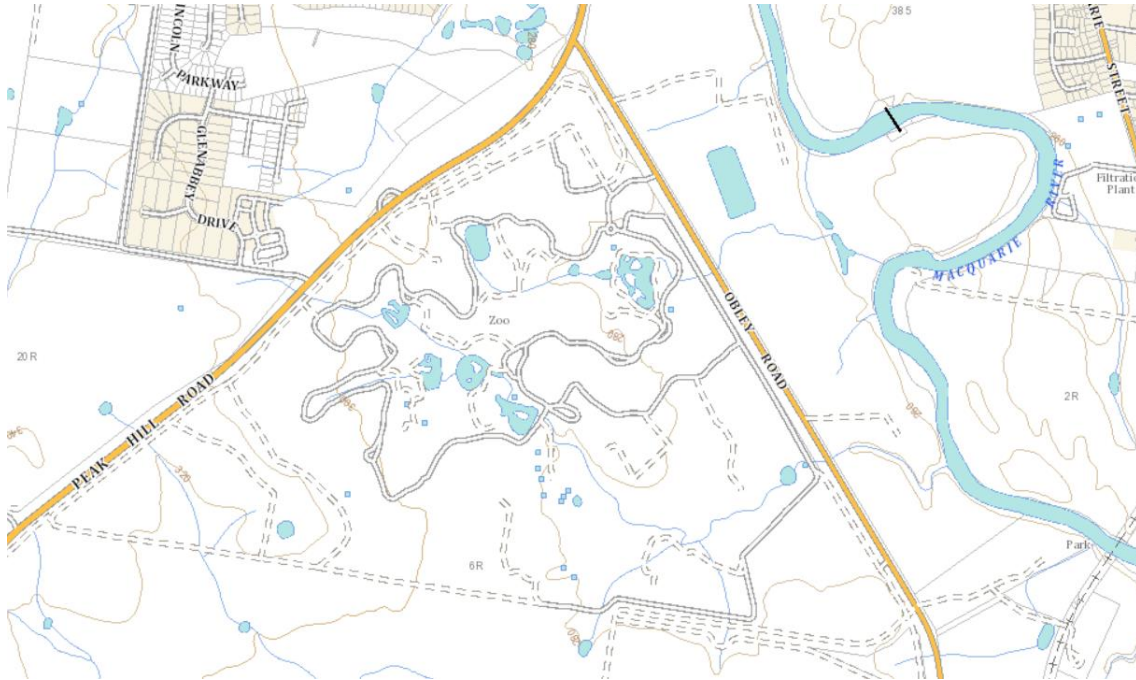
1/36 Darling Street

Dubbo NSW 2830

2 EXISTING ENVIRONMENT

2.1 Location and Title

The subject site of this application is comprised of Lot 227 DP 753233, known as the Taronga Western Plains Zoo (TWPZ), Obley Road, Dubbo NSW 2830. The site is located south-west of the city of Dubbo, as shown in **Figure 1** below.

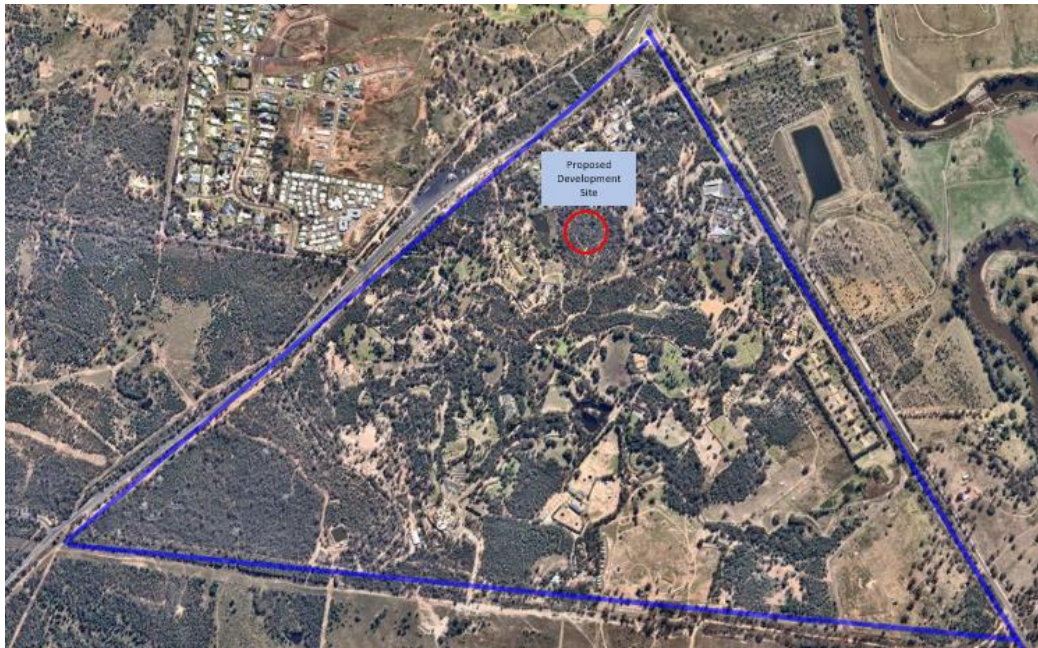


Source: (NSW Spatial Information Exchange, 2021)

Figure 1 – Site Location

The proposed Platypus Conservation Centre site is located adjacent to the proposed Wildlife Hospital and across from the Galapagos Tortoise Exhibit. The centre is also, closely located to the Zoo entrance/exit and Information Centre.

Lot 227 DP 753233 has a property area of approximately 282 Hectares. Refer to **Figures 2 & 3** and **Plates 1-4** for photos of the site and the locality.



Source: (Nearmap, 2021)

Figure 2 – Site Aerial Photograph



Source: (Nearmap, 2021)

Figure 3 – Site Aerial Photograph



Source: (Google Maps: Image capture 2021 ©2021 Google)

Plate 1 – View looking east towards the proposed development site from the internal Zoo road



Plate 2– Close up view of proposed site



Plate 3 – View of proposed Wildlife Hospital opposite



Plate 4 – View of the proposed vehicular access to Platypus Conservation Centre

2.2 Land Use

The subject site is located within the existing Taronga Western Plains Zoo. The proposed development shall be consistent with the existing use of the site and located a vacant area between existing exhibits.

2.3 Topography

The topography of the subject site is general flat with a slight slope toward the Macquarie River. Reference to the NSW 1:100,000 geological series indicates that the Dubbo area consists of alluvial and riverine plain deposits of clays, gravels, down to shales. Salinity levels in this locality are low and variable. The soils appear to be stable.

2.4 Visual Amenity

The subject land is located adjacent to the proposed Wildlife Hospital and across from the Galapagos Tortoise exhibit which are in the northern portion of the site closely located from the Zoo entrance.

2.5 Flora and Fauna

Access Environmental Planning Consultants, in their *Biodiversity Assessment Report, "Flora and Fauna"* dated June 2021 (refer to **Appendix B**) made the following observations:

"The proposal will not impact any threatened flora species as none were recorded at the site. The combination of the site survey and the review of habitat requirements for predicted fauna species found that habitat is not suitable for the majority of the species. Those that may utilise the site will not be significantly impacted as the disturbance to vegetation is small in extent and similar vegetation will remain in surrounding areas.

The plant community type which best described vegetation at the subject type is PCT 81: Western Grey Box - cypress pine shrub grass shrub tall woodland in the Brigalow Belt South Bioregion. No threatened EEC will be impacted by the development.

*The Test of Significance (under the Biodiversity Conservation Act 2016) for potential threatened species is provided the following section (**Test of significance**). In summary, due to the small size of the development, and the absence of specialised habitat features such as rock outcrops, caves and large hollow-bearing trees in or close to the development site, the test of significance concluded there is unlikely to be any impacts to threatened fauna and loss of their habitat will be negligible."*

2.6 Noise Environment

Noise measurements of background levels have not been undertaken on the site. The subject site is located within the existing zoo precinct. The main contributor to noise in the vicinity of the site is considered to be created by traffic; zoo-keeper and visitor activities. It is considered that due to the location within the Zoo, noise is not a significant factor for the proposed development or surrounding receptors.

2.7 Flooding and Stormwater

There is a small portion, on the south-eastern side, of the TWPZ land that is affected by a 1% AEP flood event in accordance with the Flood Planning Map in the *Dubbo Local Environmental Plan 2011* (the LEP). The subject footprint area to be developed is located several hundred metres from the flood affected area on the flood map and therefore is not impacted. The Macquarie River is the nearest significant watercourse located approximately 1km away and the zoo employs its own system of collection and disposing/reusing stormwater.

2.8 Bushfire

The subject land is classified as *bushfire prone land* in accordance with the Dubbo Bushfire Prone Land Map. The TWPZ has adopted its own comprehensive bushfire management plan for the existing Zoo infrastructure, which includes:

- *A five megalitre non-potable water reservoir located at the top of the Zoo that supplies the moats and water features, as well as the public toilets throughout the zoo exhibit circuit;*
- *A series of hydrants strategically located to provide for fire fighting;*
- *Self-contained fire hose reels adjacent to groups of lodges that allow for wetting down of the canvas in hazardous conditions;*
- *A first response fire team on site, made up of maintenance and keeping staff;*
- *A rapid response vehicle, larger fire truck and two Community Fire Units on site;*
- *Emergency and evacuation procedures and training;*
- *Bushfire preparedness guidelines;*
- *Close liaison between the Manager, Facilities and Asset Operations and RFS; and*
- *Closure of TWPZ and evacuation of all visitors when bushfire risk is considered catastrophic.*

Refer to TWPZ Bushfire Management details in **Appendix C**.

2.9 Services

All essential services are connected to the subject site.

The proposed development site has power and water available, including suitable firefighting equipment and water storage.

Any stormwater generated by the proposed development will be directed into existing infrastructure.

2.10 Access and Traffic

The main access point to TWPZ is from Obley Road. The intersection and existing access to the site is considered to be capable of supporting all types of vehicles. The subject site is located approximately 545 metres from the Zoo's main entrance. The internal road network is capable of supporting visitor cars; buggies; service utility vehicles and zoo staff fleet.

Traffic generation is not expected to significantly change as the proposed development coincides with the existing tourist facility.

2.11 Heritage

The "Aboriginal Cultural Heritage Due Diligence Assessment" prepared by Harrison Rochford of OzArk Environment & Heritage, dated June 2021 revealed the following about Historical and Aboriginal Cultural Heritage:

Historical Heritage

"The TWPZ site was part of the large pastoral holding Dundullimal in the late nineteenth century, which would have involved clearing and grazing across the property. During the twentieth century, the site was used as a military base including disturbances including vegetation clearing, building construction, and explosive testing. An aerial image from 1986 shows that most of the TWPZ area had been cleared by that time and indicates that much of the current vegetation at the site is regrowth".

Aboriginal Cultural Heritage

- *"The proposed works will disturb the ground surface through excavation and construction, but the likelihood of archaeological deposits has been assessed as low. All mature trees within the study area were inspected and it was concluded that the proposal will not impact any culturally modified trees.*
- *AHIMS indicated no Aboriginal sites within the study area. No landscape features in the study area indicate the likely presence of Aboriginal objects.*
- *There are no known items of Aboriginal significance present in the study area, and landforms with identified archaeological sensitivity are not present.*
- *The visual inspection did not identify any Aboriginal objects and it was assessed that there is a low likelihood of there being subsurface archaeological deposits within the study area."*

Refer to Aboriginal Due Diligence Assessment in **Appendix D**.

3 PROPOSED DEVELOPMENT

The proposed development involves the site establishment and construction of a building to support the Platypus Conservation Centre at TWPZ. The proposed development will focus on conserving the main Platypi groups within the water systems of New South Wales.

The Platypus Conservation Centre shall consist of two (2) separate building spaces being the Platypus Rescue facility and the Platypus exhibit. The Platypus rescue facility will not be open to the public only TWPZ zookeepers; cleaners and researchers. The exhibit will be open to the public generally coinciding with TWPZ opening times.

The primary purpose of the facility is to support the conservation of platypi numbers especially in periods of drought. The Rescue facility shall have a footprint area of approximately 2,554m² which includes the shed containing 60 individual holding tanks with interconnected earth burrows and nesting boxes; research space; staff amenities; feed storage area; carport and keeper room. The five (5) main blocks of tanks represent the different water systems across the country that form habitats for platypi. They have been separated to minimise the potential for cross-infection between the systems.

The front facing platypus exhibit shall take up approximately 113m², and be connected by pathways to additional parking areas, along the TWPZ circuit road.

The facility should not generate any additional staff, except for the occasional visiting researchers. The exhibit attraction should coincide with other visitations at TWPZ.

The proposed development is comprised of:

- The construction of a new Conservation Centre which has been architecturally designed and will be comprised of:
 - Food preparation rooms;
 - Platypus Refuge space for the 60 individual airlock spaces;
 - Exhibit space consisting of: walk through passage, exhibit space, plant room and back of house
 - Three (3) offices;
 - Carport and outdoor covered space with shade cover;
 - Various research rooms;
 - The proposed Conservation Centre will be constructed using bushfire preventive materials with 'Vergola' Roof panels for natural light. The roof water will be collected into two above ground 75KL rainwater tanks, located on the southern side of the centre.
- The proposed Platypus Conservation Facility shall have the following approximate floor areas:
 - Exhibit- 113m²

- Feed room- 50m²
- Office- 46m²
- Outdoor covered space- 193m²
- Refuge- 1,930m²
- Research- 335m²

Total floor area – 2667m²

- Floors: Reinforced Concrete Slab with a combination of the following finishes:
 - Exposed Aggregate
 - Sealed finish
 - FRP grating, elevated walkway
 - Paving
 - Vinyl
- Walls: Light gauge steel framing/ possible timber frame to weatherboard walls and the following:
 - External Cladding:
 - Masonry blockwork wall
 - Colorbond coolmax insulated sandwich panel
 - Rammed earth wall
 - Internal Linings:
 - Corten steel laser cut panel screen walls
 - Flush Gyprock (Paint Finish)
 - Blockwork wall construction
- Ceilings: Steel Battens Ceiling Systems with:
 - Flush Gyprock (Paint finish)
- Roofing: A combination of Structural Steel Framing, Light Gauge Steel Framing and Australian Hardwood Framing (in select areas)
 - Roof Cladding:
 - Corrugated Galvanised Roofing
- External Paving: Exposed aggregate concrete

It proposed that the area surrounding the footprint shall be remain relatively untouched.

Refer to Plans attached in **Appendix A**.

4 LAND USE ZONING

The subject site is zoned SP3 Tourist zone pursuant to the *Dubbo Local Environmental Plan 2011* (the LEP).

The proposed development being an animal conservation facility (and exhibit) remains consistent with the existing use of the land and will complement the existing operations of the Taronga Western Plains Zoo.

The permissibility of the proposed development is assessed in terms of the heads of consideration in Section 4.15(1)(a) of the *Environmental Planning & Assessment Act 1979*, which incorporates consideration of the LEP and the objectives and permissible uses outlined in the SP3 Zone.

5 PLANNING CONSIDERATIONS

5.1 Biodiversity Conservation Act 2016

5.1.1 Is the development likely to significantly affect threatened species?

Clause 7.2 of the *Biodiversity Conservation Act 2016* (BC Act) identifies the following circumstances where a development is likely to significantly affect threatened species:

- (a) *it is likely to significantly affect threatened species or ecological communities, or their habitats, according to the test in section 7.3, or*
- (b) *the development exceeds the biodiversity offsets scheme threshold if the biodiversity offsets scheme applies to the impacts of the development on biodiversity values, or*
- (c) *it is carried out in a declared area of outstanding biodiversity value.*

5.1.1.1 Section 7.3 Test

To determine whether a development is likely to significantly affect threatened species or ecological communities, or their habitats, the following is to be taken into account in accordance with Section 7.3 of the BC Act:

- (a) *in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,*
- (b) *in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:*
 - (i) *is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or*
 - (ii) *is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,*
- (c) *in relation to the habitat of a threatened species or ecological community:*
 - (i) *the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and*
 - (ii) *whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and*
 - (iii) *the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,*
- (d) *whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),*
- (e) *whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.*

Comment: The “Biodiversity Assessment” undertaken by Access Environmental Planning, refer to **Appendix C**, concludes that the proposed development is unlikely to impact on any threatened species or ecological communities, or their habitats.

5.1.1.2 Section 7.4 Test

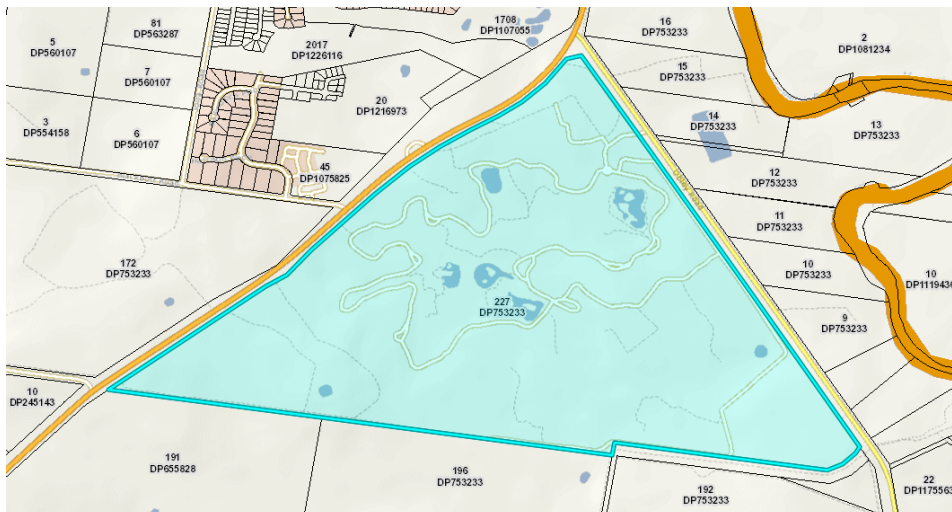
Section 7.4 of the BC Act states:

- (1) *Proposed development exceeds the biodiversity offsets scheme threshold for the purposes of this Part if it is development of an extent or kind that the regulations declare to be development that exceeds the threshold.*
- (2) *In determining whether proposed development exceeds the biodiversity offsets threshold for the purposes of this Part, any part of the proposed development that involves the clearing of native vegetation on category 1-exempt land (within the meaning of Part 5A of the Local Land Services Act 2013) is to be disregarded.*

Comment: The proposed development shall not exceed the one (1) hectare threshold applicable for the size of the subject lot, and therefore BOS assessment is not required.

5.1.1.3 Declared Area of Outstanding Biodiversity Value

The site is not mapped on the Biodiversity Value Map as being land with a high biodiversity value as defined by the BC Act., refer to **Figure 4**.



Source: (NSW Spatial Information Exchange, 2021)

Figure 4 – Biodiversity Value Map

5.1.2 Biodiversity Development Assessment Report

As outlined in **Section 5.1.1**, the proposed development is not likely to significantly affect threatened species as defined by Section 7.2 of the BC Act. Therefore, a Biodiversity Development Assessment Report is not required to accompany the application for development consent.

5.2 Fisheries Management Act 1994

5.2.1 Applicability

The Fisheries Management Act 1994 (FM Act) applies to:

- (a) *in relation to all waters that are within the limits of the State, and*
- (b) *except for purposes relating to a fishery, or a part of a fishery, that is to be managed in accordance with the law of the Commonwealth pursuant to an arrangement under Division 3 of Part 5 and except for purposes prescribed by paragraph (d)—in relation to any waters of the sea not within the limits of the State that are on the landward side of waters adjacent to the State that are within the Australian fishing zone, and*
- (c) *for purposes relating to a fishery, or a part of a fishery, that is managed in accordance with the law of the State pursuant to an arrangement under Division 3 of Part 5—in relation to any waters to which the legislative powers of the State extend with respect to that fishery, whether pursuant to section 5 of the Coastal Waters (State Powers) Act 1980 of the Commonwealth or otherwise, and*
- (d) *for purposes relating to recreational fishing activities engaged in otherwise than by use of a foreign boat (other than recreational activities prohibited or regulated under a plan of management determined under section 17 of the Commonwealth Act)—in relation to any waters to which the legislative powers of the State extend with respect to such activities.*

Comment: The Fisheries Management Act 1994 does not apply to the subject proposal.

5.2.2 Is the development likely to significantly affect threatened species, population or ecological community?

Section 221ZV of the FM Act requires the following matters to be taken into consideration to determine whether a proposed development or activity is likely to significantly affect threatened species, populations or ecological communities (unless it is carried out in critical habitat):

- (a) *in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,*
- (b) *in the case of an endangered population, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction,*
- (c) *in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:*
 - (i) *is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or*
 - (ii) *is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,*
- (d) *in relation to the habitat of a threatened species, population or ecological community:*

- (i) *the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and*
- (ii) *whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and*
- (iii) *the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the threatened species, population or ecological community in the locality,*
- (e) *whether the proposed development or activity is likely to have an adverse effect on any critical habitat (either directly or indirectly),*
- (f) *whether the proposed development or activity is consistent with a Priorities Action Statement,*
- (g) *whether the proposed development constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.*

The assessment guidelines under section 220ZZA apply to the determination of whether any such proposed development or activity is likely to significantly affect threatened species.

Comment: The Fisheries Management Act 1994 does not apply to the subject proposal.

5.3 Environmental Planning & Assessment Act 1979

5.3.1 Section 4.15(1)

Section 4.15(1) of the EP&A Act (as amended) requires the Council to consider various matters in regard to the determination of the Development Application.

In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:

- (a) *The provisions of:*
 - (i) *any environmental planning instrument, and*
 - (ii) *any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and*
 - (iii) *any development control plan, and*
 - (iiia) *any planning agreement that has been entered into under section 93F, or any draft planning agreement that a developer has offered to enter into under section 93F, and*
 - (iv) *the regulations (to the extent that they prescribe matters for the purposes of this paragraph), and*

- (v) *any coastal zone management plan (within the meaning of the Coastal Protection Act 1979), that apply to the land to which the development application relates,*
- (b) *The likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality;*
- (c) *The suitability of the site for the development,*
- (d) *Any submissions made in accordance with this act or the regulations,*
- (e) *The public interest.*

The proposed development has been designed with consideration to the following matters, as outlined below.

5.4 Environmental Planning Instruments

5.4.1 State Environmental Planning Policies (SEPP 55)

While a number of SEPPs apply to the subject land and development thereon there will be no significant implications in terms of the requirements of the SEPPs on the proposed development. SEPP 55 – Remediation of Land is considered below:

5.4.1.1 SEPP No.55 - Remediation of Land

Clause 7 of *State Environmental Planning Policy No.55 – Remediation of Land* (SEPP 55) requires Council to consider the following before granting consent to a DA:

- (a) *it has considered whether the land is contaminated, and*
- (b) *if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and*
- (c) *if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.*

Comment: A site inspection of the subject site was carried out by Barnson on 28 May 2021. There was little or no recent disturbance witnessed over the proposed footprint and the land does not appear to have been subject to any of the materials listed in Appendix A of the *Managing Land Contamination: Planning Guidelines SEPP 55 – Remediation of Land* (NSW Department of Urban Affairs and Planning & Environment Protection Authority, 1998).

It appears that there have not been any contaminating uses carried out on the proposed site to be developed and it is considered that no further preliminary site investigation is required in this instance.

5.4.2 Dubbo Local Environmental Plan 2011

5.4.2.1 Zone Objectives & Land Use Table

The consent authority must have regard to the objectives for development in a zone when determining a development application in respect of land within the zone. The objectives of the SP3 Tourist zone are as follows:

- *To provide for a variety of tourist-oriented development and related uses.*
- *To recognise the importance of the Taronga Western Plains Zoo as a key tourist facility with the area of the City of Dubbo.*
- *To facilitate tourist-oriented development along major transport corridors and at key nodes throughout the City of Dubbo.*
- *To ensure that further tourism related development in the Cobra Street and Whylandra Street precincts will not interfere with established uses on adjoining residentially zoned land.*
- *To ensure that development in the Camp Road precinct will not interfere with the continued operation of the Taronga Western Plains Zoo.*

Comment: The TWPZ is recognised as a major tourist facility for the city of Dubbo, it provides a base for important zoological research and animal conservation to be undertaken as well as providing economic benefits for the City of Dubbo area by being an eminent tourist attraction. The proposed Platypus Conservation Centre development will further complement and enhance the existing TWPZ as it will support its' current research and conservation programmes, it will provide specialised facilities for the treatment for Platypi whilst providing additional exhibits and educational facilities to enhance the zoo visitor guest experience.

5.4.2.2 Flood Planning

Clause 7.1 'Flood planning' of the LEP applies to the subject application as there is a small portion of the TWPZ, midway along the eastern boundary, that is affected by a 1:100-year flood event in accordance with the Flood Planning Map in the *Dubbo Local Environmental Plan 2011* (the LEP), refer to **Figure 5**. The separation distance between the two sites is approximately 1.2kms. Therefore, considering the separation between the subject site and flood affected area, in addition to the variance in natural ground surface levels, no further investigation is required for flood planning.



Source: (Dubbo Local Environmental Plan 2011)

Figure 5 – Dubbo LEP Flood Planning Map

5.4.2.3 Natural Resource - Biodiversity

Clause 7.2 'Natural resource – biodiversity' applies to the subject application as the site is identified as part moderate and part high under the natural resource - biodiversity mapping. The site is afforded with well-established flora and fauna and is home to a significant number of animals who are cared for by the staff who operate the zoo. Diligence shall be undertaken during construction works to ensure that any native vegetation community, habitat and ecological communities are protected and not susceptible to any adverse impacts as part of the proposed development. There is some clearing of vegetation required and the proposed development is designed and sited to allow the public to enjoy the zoo operations and the interaction with the ecological community and animals under their care. Furthermore, Access Environmental Planning, in their "Biodiversity Assessment", (refer to **Appendix B**), advised that the proposed development would not create any significant impacts on flora or fauna.

5.4.2.4 Earthworks

Clause 7.3 'Earthworks' applies to the subject application as earthworks are as part of development works. The site is gradually sloping, and it is considered that there shall be some earthworks required to support the development. The project's aim is to be cut and fill neutral on the site. If any imported fill is required it shall be sourced from the other Zoo projects programmed for construction or the Zoo's stockpile.

There shall be no significant disruption or detrimental effect on existing drainage patterns, soil stability or any cultural heritage items or features surrounding the subject site. Appropriate erosion and sediment controls will be undertaken on the site during development works to prevent or reduce any soil erosion that would occur on the site.

5.4.2.5 Groundwater Vulnerability

Clause 7.5 'Groundwater vulnerability' applies to the subject application as the subject land is mapped as moderately high and high under the groundwater vulnerability mapping.

TWPZ conservation team advises that discharges shall be domestic in nature with no especially toxic chemicals to be used. The proposed development shall be connected to reticulated services and unlikely to affect the function of any key groundwater systems, nor would it create any depletion or contamination of vulnerable groundwater resources.

5.5 Draft Environmental Planning Instruments

Dubbo Regional Council has released the '*Draft Dubbo Regional Local Environment Plan 2021*' consolidating the *Dubbo Local Environmental Plan* and *Wellington Local Environmental Plan*. Minor changes have been prepared; the proposed changes do not have a direct impact on the proposed development.

5.6 Dubbo Development Control Plan (DCP) 2013

There are no site-specific controls provided in the DCP. The following sections are considered applicable:

Section 3.1- Designing for Access and Mobility, is considered applicable to facilitate suitable access requirements. The proposal generally complies with this part of the DCP as the Platypus Exhibit Area shall be accessible. It is expected that parts of the rescue facility may not be accessible as it will require abled body persons to maintain and work in this area. This shall be addressed as part of BCA reporting.

Onsite parking is well catered for and managed at the TWPZ, and it is proposed to provide some additional formal spaces in close vicinity to the development.

5.7 Any Planning Agreement entered into

No Planning Agreements entered into are known to exist in relation to the development or site.

5.8 Any Matters Prescribed by the Regulations

For the purposes of Section 4.15(1)(a)(iv) of the EP&A Act, Clause 92 of the *Environmental Planning and Assessment Regulations 2000* (EP&A Regulations) specifies (clause 92) the additional matters a consent authority must take into consideration when determining a DA.

5.8.1 Dark Sky Planning Guidelines

The Dark Sky Planning Guidelines apply to development carried out in the Local Government Area of the City of Dubbo.

5.8.1.1 Factors Affecting the Observing Environment

The Guidelines outline the following factors that affect the observing environment:

- Distance between the light source and the telescope
- Quantity of light
- Type of Light Emitted
- Direction in which the light shines

The site is approximately 115kms from the observatory. The proposed development would include some internal and external building lighting. The quantity of lighting would be minimised and be well below 1,000,000 lumens.

5.8.1.2 Good Lighting Design Principles

The proposed development would include lighting consistent with the principles of good lighting design as outlined below:

- Principle 1 – Eliminate Upward Spill of Light
- Principle 2 – Direct Light Downwards, Not Upwards
- Principle 3 – Use Shielded Fittings
- Principle 4 – Avoid ‘over’ Lighting
- Principle 5 – Switch Lights off when not required
- Principle 6- Use Energy Efficient Bulbs
- Principle 7 – Use Asymmetric beams where floodlights are used
- Principle 8 – Ensure Lights are not directed towards reflective surfaces
- Principle 9 – Use Warm white colours.

5.9 Any Likely Impacts of the Development

5.9.1 Context & Setting

The proposed development is to be carried out on at an existing tourist attraction, known as the Taronga Western Plains Zoo (TWPZ). The proposed development site is located between the existing Galapagos Tortoise Exhibit and the TWPZ Education Centre. The proposed development complements the existing operations of the site and is unlikely to create any adverse impacts on the amenity of the locality.

The proposed development is considered to remain consistent with the existing built landscape on the site and in the locality and will not create any nuisance on adjoining property owners or the existing operations of the Zoo.

5.9.2 Access, Transport & Traffic

During the construction period of the proposed development there is likely to be some increase in traffic generated on the site by workers vehicles, transportation of materials, however, the internal road network is considered capable of supporting any traffic increases. Construction hours will be limited to daylight as per Council's requirements.

It is hoped that the exhibit will attract more tourists to the TWPZ, however this is still likely to coincide with normal visitation and therefore overall traffic impact is considered to be negligible. An improved car parking area is proposed which is less visually intrusive. It is considered that the internal road network and road safety mechanisms are appropriate for any change in traffic generation.

5.9.3 Visual Amenity

The proposed development shall be incorporated into the existing setting. The proposed landscaping plan for the area surrounding the Platypus Conservation Centre has been carefully considered and will result in the building being integrated into and linked to its' surroundings with pathways and interpretive signage connecting the viewing area at the front of the building directly with the adjoining extensive native landscaped garden area (incorporating the lookouts, Grassland, Wetland, Creek and Woodland Nodes, and new Zoo exhibits), which will soften the buildings impact upon the Zoo's semi-rural setting.

5.9.4 Water

The proposed development shall not result in any reduction of water quality. Stormwater from the development shall be harvested. Any overflow is to be directed to the existing stormwater system.

The demand for water to supply the development shall not be constant. It is reliant on the number of times the tanks will need to be used (i.e over extended drought periods) to protect vulnerable platypi. For this reason and given the conservation nature of the project it is recommended that the development be exempt from any applicable urban water contributions.

5.9.5 Noise

During construction works on the site there is likely to be a slight increase in noise due to the higher incidence of workers and equipment on the site. Given the proposed location of the site footprint being well within TWPZ, it is considered that any additional noise generated is unlikely to be offensive to any neighbouring properties in the locality.

The proposed development is unlikely to cause noise impact during operation.

5.9.6 Natural Hazards

5.9.6.1 Bush Fire

The subject land is identified as being bushfire prone land. The TWPZ Bushfire Management plan states the emergency access points at all areas of the vicinity. The plan outlines the evacuation process for both visitors and workers. Please refer to bushfire management planning attached **Appendix C**.

The Planning for Bush Fire Protection Guide 2019 does not specifically capture buildings, of this nature however it does state that consideration should be given to other development (not residential) for the purposes of appropriate access, water supply and services, and emergency and evacuation planning in bush fire prone areas:

- to provide safe access to/from the public road system for firefighters providing property protection during a bush fire and for occupant egress for evacuation;

Comment: The proposed development is accessible by a sealed road suitable for egress in the event that evacuation is required.

- to provide suitable emergency and evacuation (and relocation) arrangements for occupants of the development;

Comment: Occupants of the development shall in most cases be TWPZ workers familiar with the emergency evacuation procedures. Refer also to **Appendix C**.

- to provide adequate services of water for the protection of buildings during and after the passage of bush fire, and

Comment: It is intended to provide an adequate reticulated water service for fire fighting purposes.

- to locate gas and electricity so as not to contribute to the risk of fire to a building; and provide for the storage of hazardous materials away from the hazard wherever possible.

Comment: It is recommended that gas and electricity design take into account bush fire protection measures. No hazardous materials are known to be part of this development.

Note. The general fire safety construction provisions of the NCC are taken as acceptable solutions however construction requirements for bush fire protection will need to be considered on a case-by-case basis.

5.9.7 Social & Economic Impacts in the Locality

The social and economic impacts of the proposed development relate to the expansion of existing facilities on a site that is used for tourism in the city of Dubbo. The existing use and proposed development works are permissible in the SP3 tourist zone and would not create an unacceptable adverse impact on the community for servicing. Servicing costs on the site are to be carried out at the full cost of the developer and shall not create any adverse impacts on existing services in the locality. The proposed centre shall contribute to the Dubbo economy providing potential growth and tourism in the area. It supports wildlife education and conservation programs and assists in the recovery of injured or vulnerable animals. Therefore, the proposed development is considered to provide a positive social and economic impact in Dubbo and the surrounding region.

5.9.8 Construction

A site establishment area can be set up on the subject land to ensure site safety and minimal environmental impact, and minimal disruption to adjoining properties.

Erosion and sediment controls shall be carried out on the site during development works.

5.10 Suitability of the Site for the Proposed Development

5.10.1 Does the proposal fit in the locality?

The suitability of the site for the proposed development has been addressed in the above sections of this report. There are no prohibitive constraints posed by any adjacent development; there are adequate transport facilities in the area; utilities and services are available to the site; there are no significantly hazardous land uses or activities located within proximity to the site and ambient noise levels shall not significantly affect the proposed development.

5.10.2 Are the site attributes conducive to development?

There do not appear to be any zoning, planning or environmental matter/s that should hinder the proposed development of the site. The proposed development shall fit appropriately within the site and will contribute to the existing operations of the zoo.

5.11 The Public Interest

The proposal is unlikely to create any negative impacts on the amenity of the area and is therefore deemed to be positive in terms of the public interest.

6 CONCLUSION

It is recommended that the proposed Platypus Conservation Centre development at Lot 227 in DP 753233, Taronga Western Plains Zoo, Obley Road, Dubbo be supported on the following grounds:

- The proposal is considered acceptable in terms of the provisions of Section 4.15 of the *Environmental Planning and Assessment Act 1979*;
- The proposal is permissible with consent and consistent with the relevant development standards and provisions of the *Dubbo Local Environmental Plan 2011*;
- The proposal generally complies with the relevant provisions of the Dubbo Development Control Plan 2013;
- The proposed development is not anticipated to generate any adverse impacts in the locality;
- The proposed development is considered compatible in terms of the existing tourist facility and the development site shall generally retain its existing amenity;
- Bushfire protection measures have been identified and can be implemented to ensure compliance with Planning for Bushfire Protection 2019 guidelines; and
- The proposed development will provide a positive social and economic benefit, by providing modern and unique facility that supports educational and tourism objectives in the locality.

If this submission raises any further enquiries please contact the undersigned in our Dubbo office.

Yours faithfully

BARNSON PTY LTD

Jim Sarantzouklis MAIBS MEHA RPIA

DIRECTOR

7 REFERENCES

Dubbo Development Control Plan 2013

Dubbo Local Environmental Plan 2011

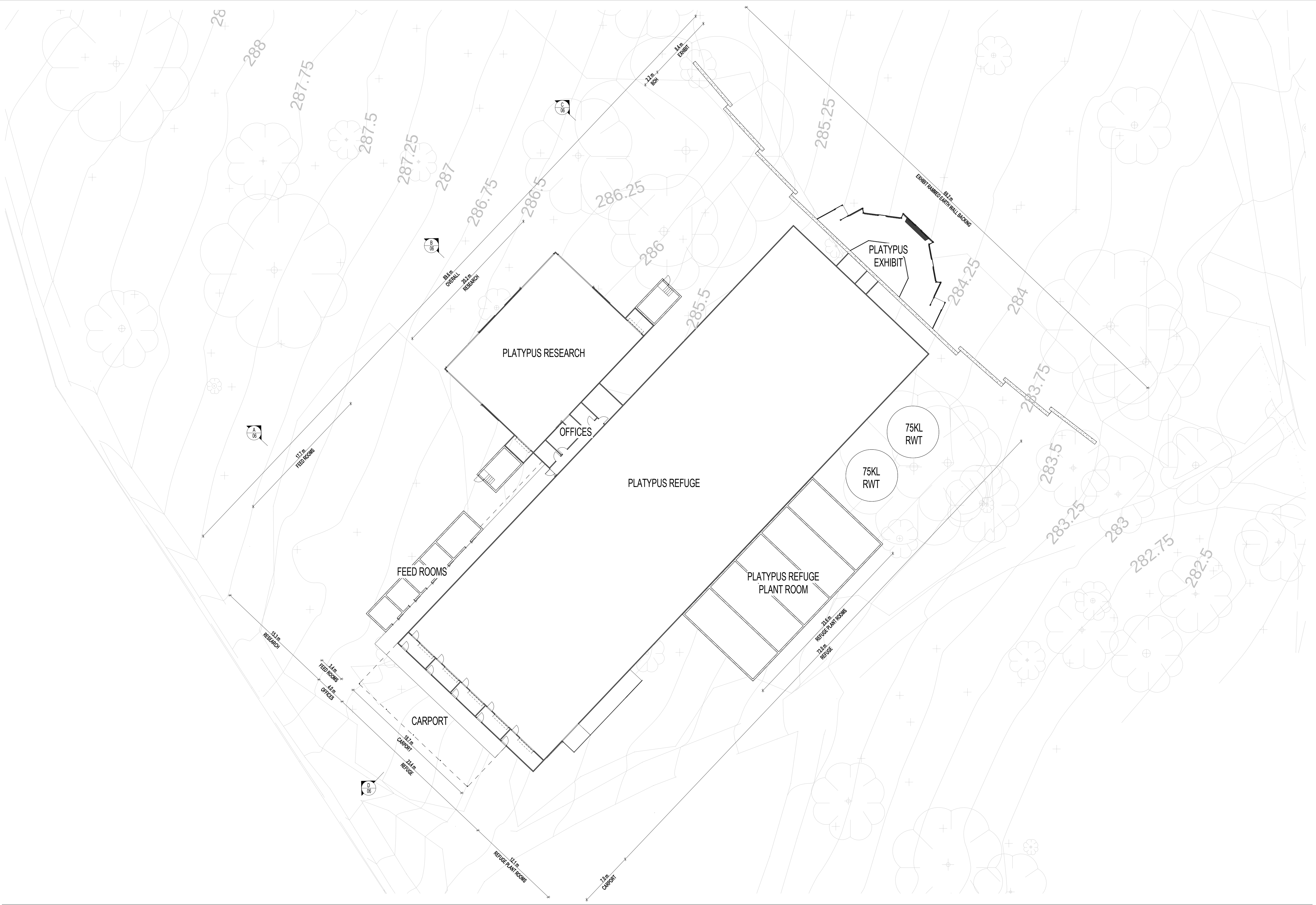
Environmental Planning and Assessment Act 1979

Planning for Bush Fire Protection Guidelines 2019

Soil Landscapes of the NSW 1:100,000 Geological series, Department of Land and Water Conservation of NSW, Sydney

Appendix A - Development Plans







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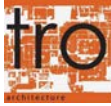
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CONC(EA)	CONCRETE EXPOSED AGGREGATE
CONC(S)	CONCRETE SEALED FINISH
FRP	FRP GRATING, ELEVATED WALKWAY
PA	PAVING
V	VINYL

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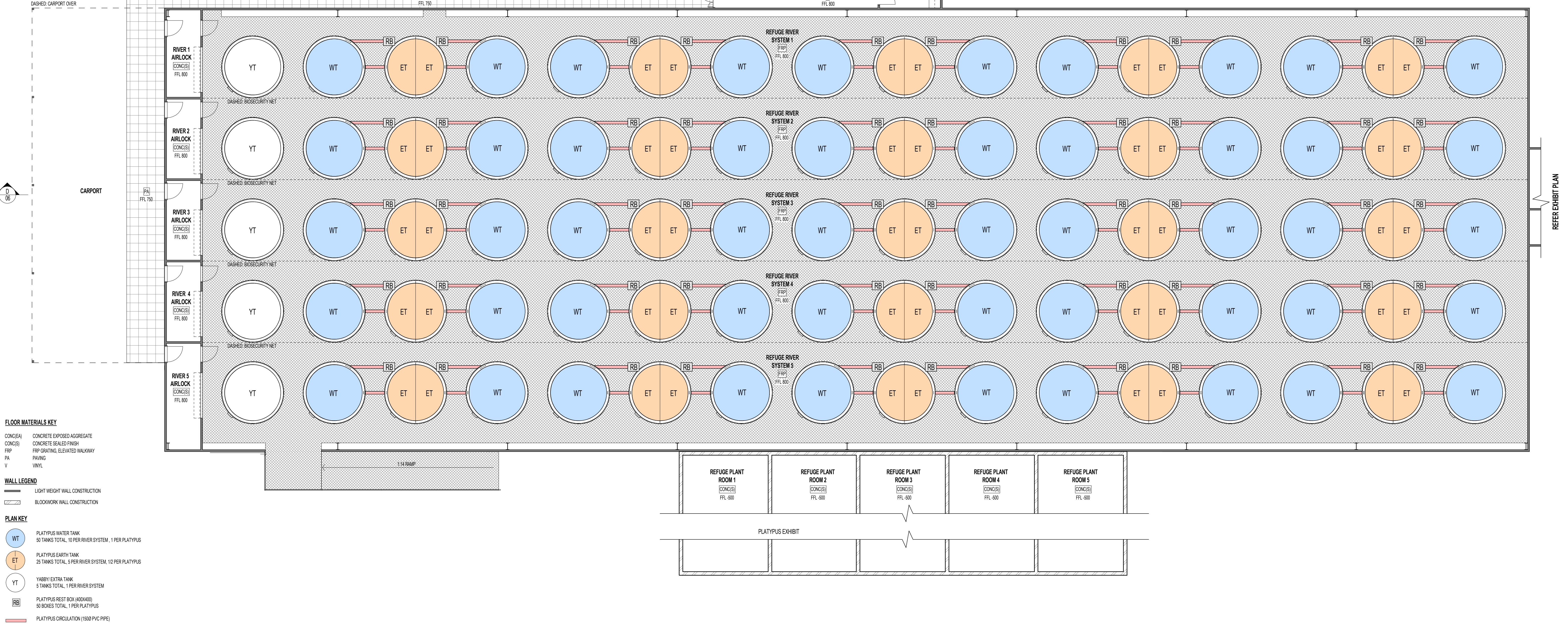


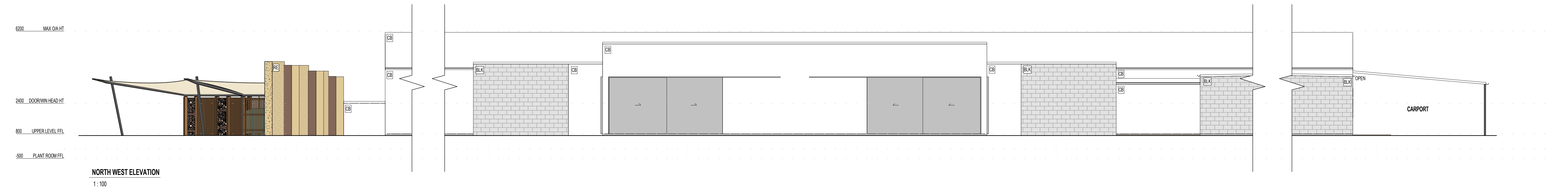
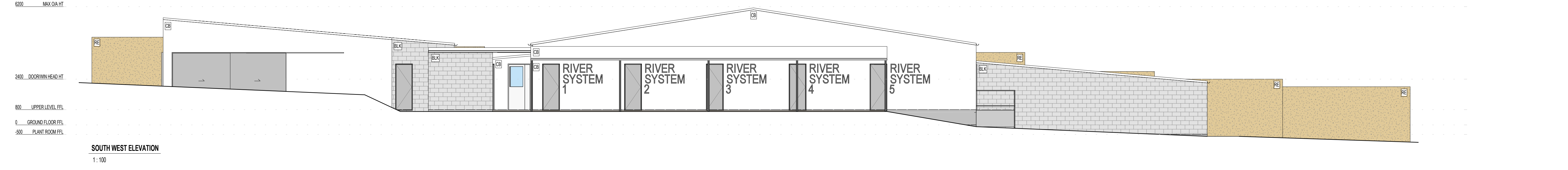
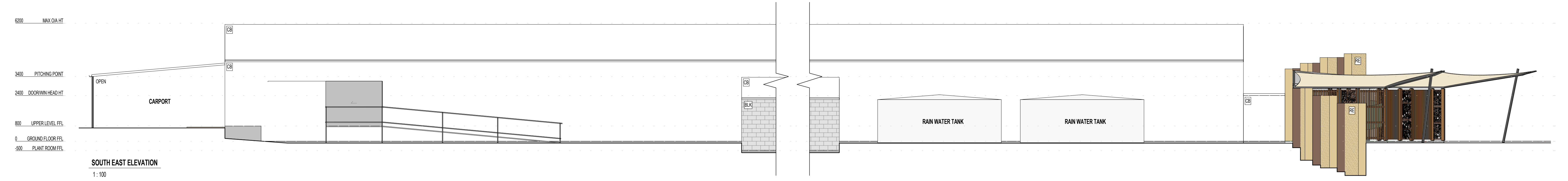
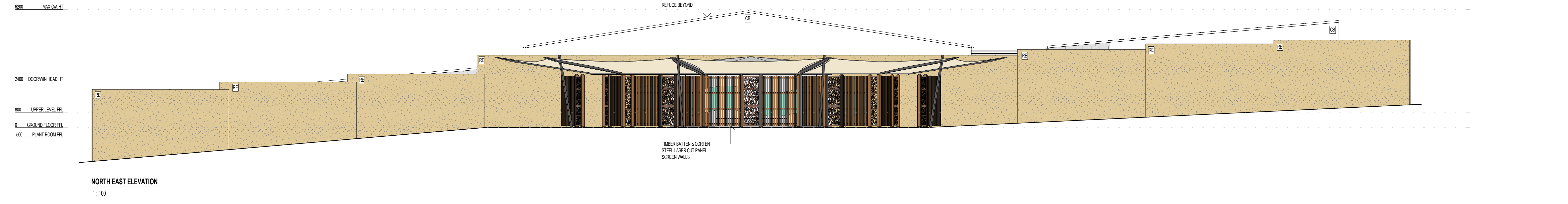
DATE: 25.06.2021

SCALE: As indicated



ROOM AREA SCHEDULE	
EXHIBIT	
PLATYPUS EXHIBIT	26 m ²
PLATYPUS EXHIBIT WALK THROUGH	76 m ²
EXHIBIT PLANT ROOM	7 m ²
EXHIBIT BACK OF HOUSE	4 m ²
	113 m ²
FEED ROOM	
MEAL PREP	9 m ²
WORMS	15 m ²
PUPAE	9 m ²
MAGGOTS	8 m ²
FLYS	9 m ²
	50 m ²
OFFICE	
OFFICE	13 m ²
KITCHEN	8 m ²
WC	6 m ²
IT	5 m ²
PASSAGE	14 m ²
	46 m ²
OUTDOOR COVERED SPACE	
CARPORT	131 m ²
UNDERCOVER BREEZEWAY	62 m ²
	193 m ²
REFUGE	
REFUGE RIVER SYSTEM 4	301 m ²
RIVER 3 AIRLOCK	8 m ²
RIVER 4 AIRLOCK	8 m ²
RIVER 5 AIRLOCK	10 m ²
RIVER 2 AIRLOCK	8 m ²
RIVER 1 AIRLOCK	8 m ²
REFUGE PLANT ROOM 1	53 m ²
REFUGE PLANT ROOM 2	52 m ²
REFUGE PLANT ROOM 3	53 m ²
REFUGE PLANT ROOM 4	53 m ²
REFUGE PLANT ROOM 5	53 m ²
REFUGE RIVER SYSTEM 5	396 m ²
REFUGE RIVER SYSTEM 3	301 m ²
REFUGE RIVER SYSTEM 2	301 m ²
REFUGE RIVER SYSTEM 1	228 m ²
	1930 m ²
RESEARCH	
RESEARCH RIVER SYSTEM 2	147 m ²
RESEARCH PLANT ROOM 1	13 m ²
RESEARCH PLANT ROOM 2	13 m ²
RESEARCH STORE 2	5 m ²
RESEARCH STORE 1	5 m ²
REST BOX STORE	4 m ²
RESEARCH RIVER SYSTEM 1	147 m ²
	335 m ²
Grand total	2667 m ²





6200 MAX OIA HT

2400 DOORWIN HEAD HT

800 UPPER LEVEL FFL

0 GROUND FLOOR FFL

-500 PLANT ROOM FFL

SECTION A

1:100

6200 MAX OIA HT

2400 DOORWIN HEAD HT

800 UPPER LEVEL FFL

0 GROUND FLOOR FFL

-500 PLANT ROOM FFL

SECTION B

1:100

6200 MAX OIA HT

2400 DOORWIN HEAD HT

800 UPPER LEVEL FFL

0 GROUND FLOOR FFL

-500 PLANT ROOM FFL

SECTION C

1:100

6200 MAX OIA HT

3400 PITCHING POINT

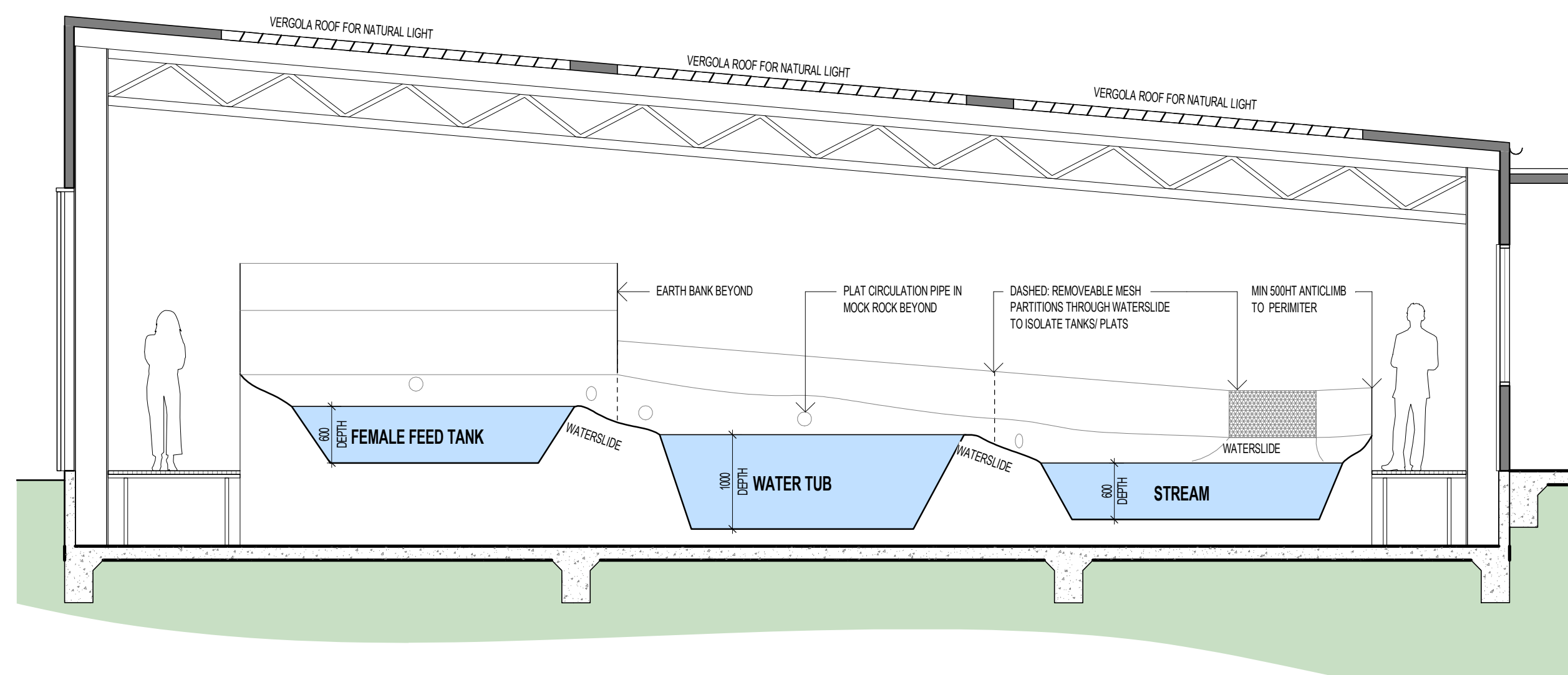
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800 UPPER LEVEL FFL

0 GROUND FLOOR FFL

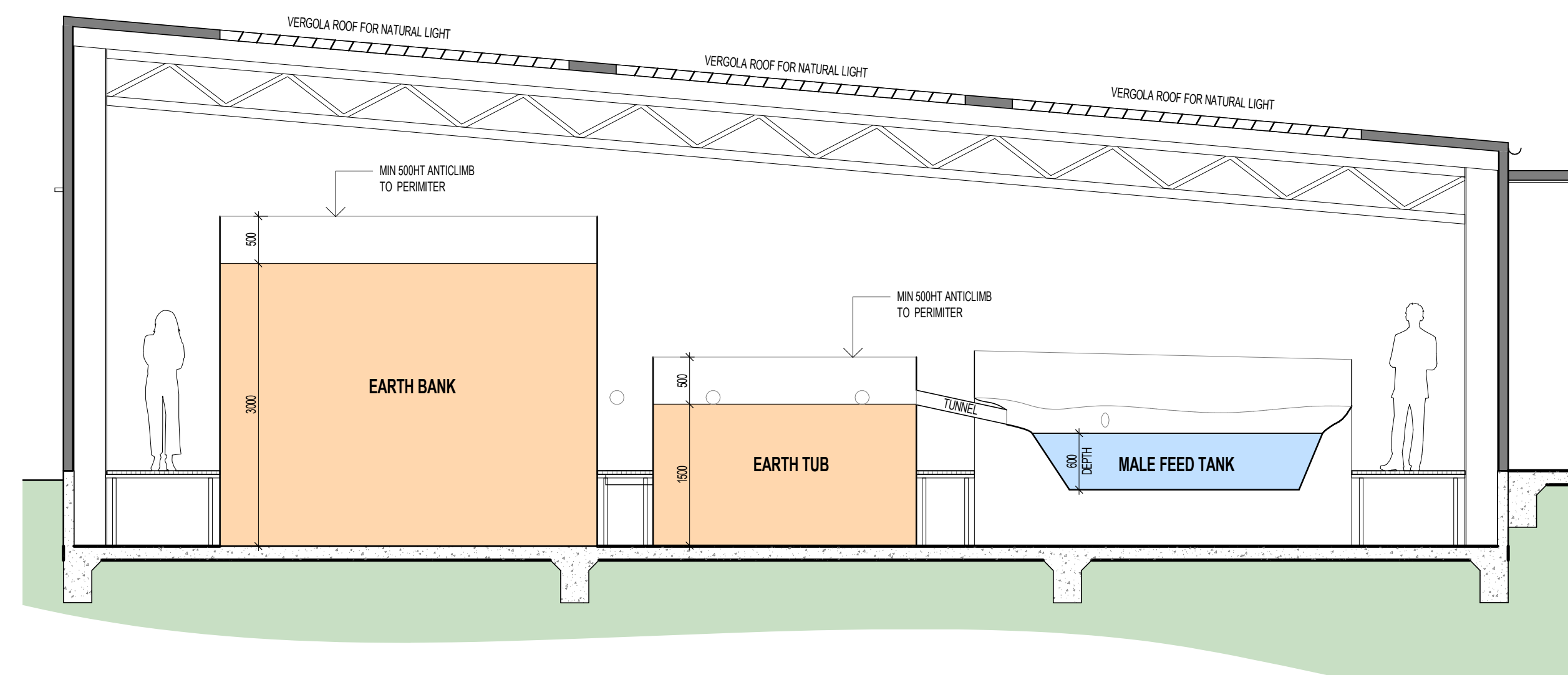
SECTION D

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RESEARCH SECTION A

1:50



RESEARCH SECTION B

1:50

Appendix B - Biodiversity Assessment

PO Box 686
113 Madeira Road
MUDGEE NSW 2850



Contact: Chris Botfield
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ENVIRONMENTAL PLANNING, ASSESSMENT & MAPPING CONSULTANTS

Flora & Fauna Report

for proposed Platypus Conservation Centre

at Taronga Western Plains Zoo DUBBO

Dubbo Local Government Area

June 2021



Prepared for:

The Taronga Conservation Society Australia

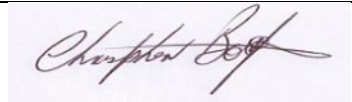


Quality Certified System ISO 9001
Environmental Certified System ISO 14001
Safety Certified System ISO 45001



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Document details

Subject property:	Lot 227 DP 753233 'Taronga Western Plains Zoo' 6R Obley Road, DUBBO, 2830
Proponent:	The Taronga Conservation Society of Australia (TCSA)
Document Date:	25/06/2021
Prepared by:	 Christopher Botfield B. Environmental Management CSU 1999 Accredited Biodiversity Assessment Method (BAM) Assessor Ph: 0429 944 430 Email: chris@accessep.com.au

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Abbreviations

Access EP	Access Environmental Planning
APZ	Asset Protection Zone
BC Act	NSW Biodiversity Conservation Act 2016
BAM	Biodiversity Assessment Methodology
BOS	Biodiversity Offset Scheme
CBD	Central Business District
CC	Conservation Centre
EEC	Endangered Ecological Communities
EPBC Act	Environmental Planning and Biodiversity Conservation Act 1999
LEP	Local Environmental Plan
LGA	Local Government Area
NSW	New South Wales
PCT	Plant Community Type
SEPP	State Environmental Planning Policy
TCSA	Taronga Conservation Society Australia
TWPZ	Taronga Western Plains Zoo

Executive summary

Access Environmental Planning (Access EP) has been employed by the Taronga Conservation Society Australia (TCSA) to undertake and prepare a Biodiversity Assessment report for the construction of the Platypus Conservation Centre (CC) at Taronga Western Plains Zoo (TWPZ).

The main facility will be approximately 1800m² and include 60 individual holding tanks with interconnected earth burrows and nesting boxes, a laboratory/research space, staff amenities, storage, keeper area, and possible public facing platypus exhibit. It will also include an access road, plantroom and service connections with total planned disturbance approximately 6500 m².

The site is located approximately 3.5 km southwest of the Dubbo CBD, within the confines of the Taronga Western Plains Zoo. The site has been highly disturbed from past clearing activities and site use, making the majority of the trees only 30-40 years old, with some older dead stems. The main vegetation on site consisted of white cypress pine trees with an understory of introduced weeds and some native grass species.

A site inspection was undertaken by Christopher Botfield, Renae Hill and Michaela Burns in early June 2021 to assess the vegetation present within the site, the amount of vegetation expected to be cleared, the presence of any threatened flora or fauna and the impact of the clearing within the context of the site. In total 45 plant and animal species were seen during the site inspection, none of which are threatened within NSW or nationally.

Conclusion

The Biodiversity Offset Scheme (BOS) threshold for development on a lot this size is one hectare or 10,000 square metres (m²). The proposed development requires clearing of less than this area, meaning the BOS does not apply.

Due to the lack of diversity and habitat, the clearing of vegetation within the site will not create a large impact on the use of the site by native animals. The site also did not contain any Endangered Ecological Communities (EEC). The construction of the building on this site will not cause large scale fragmentation of habitat. With only one nest indicated during the site inspection this area is unlikely to be heavily utilised by native animals.

Contents

Introduction and background.....	7
Background	7
Information sources.....	7
Proposed development.....	7
Property details.....	10
Overview of methods.....	10
Author qualifications.....	10
Limitations and assumptions	11
Site assessment	11
Landscape context and bioregion	11
Native vegetation types.....	15
Weeds	17
Threatened flora	17
Threatened fauna.....	18
Threatened ecological communities.....	22
Aquatic habitat.....	22
Impact assessment	22
Development footprint and vegetation impact.....	22
Threatened species and communities	23
Biodiversity Offset Scheme thresholds.....	23
Test of significance.....	25
Conclusion and recommendations.....	26
References.....	27
Appendix A: Species noted during site inspection	28
Appendix B: Priority weeds for the Central West	29
Appendix C: BioNet Atlas search results	40

Tables

Table 1 - Summary of author qualifications.....	10
Table 2 - Threatened plant species observed around the site	17
Table 3 - Threatened animal species observed surrounding the site.....	18
Table 4 - Summary of the development footprint.....	22
Table 5 - Native vegetation clearing thresholds by lot size.	24

Figures

Figure 1 - Site plan showing the proposed layout of the conservation centre.....	8
Figure 2 - Dubbo LEP land zoning map	9
Figure 3 - Context map.....	12
Figure 4 - Proposed area of the site and location of the power infrastructure.....	13
Figure 5 - Subject site with the layout of the main building indicated	14
Figure 6 - Typical ground cover throughout the site	15
Figure 7 - Typical vegetation (white cypress pine, sticky hopbush and weed species).	16
Figure 8 - Biodiversity Values Map near the subject site.....	24

Introduction and background

Background

Taronga Conservation Society of Australia (TCSA) has secured State Government funding to construct a Platypus Conservation Centre (CC) at Taronga Western Plains Zoo (TWPZ), Lot 227 DP753233. Access Environmental Planning (Access EP) was engaged by Taronga Western Plains Zoo, Dubbo, to undertake a flora and fauna assessment and 'Test of Significance' for threatened species and ecological communities, in relation to the potential impacts of the development.

This assessment seeks to address the requirements for biodiversity assessment under the *NSW Biodiversity Conservation Act 2016* (BC Act). The report documents the assessment and has been prepared to support the Development Application submission to Council.

Information sources

Documentation and information sources for this assessment include the following.

- Design plans (dated 17/05/2021)
- Dubbo Regional Council Local Environmental Plan 2011
- NSW Planning Portal
- NSW Government aerial imagery and other spatial data layers including contours, cadastre, etc
- BioNet databases (www.bionet.nsw.gov.au), including threatened species profiles, species records and vegetation classification system (DPIE 2021).
- Flora NSW Online (www.plantnet.rbgsyd.nsw.gov.au) and Flora of New South Wales (Vol 1-4, Harden 1991-2002)

Proposed development

The main facility will be approximately 1800 m², including 60 individual holding tanks with interconnected earth burrows and nesting boxes, a laboratory/research space, staff amenities, storage, keeper room with the possibility of the public facing platypus exhibit. Additional provision is required for an access or service road, plantroom and service connections. In order for this development to remain under the area threshold requirement of the BOS, any Asset Protection Zone (APZ) must not increase planned clearing of vegetation over the 10,000 m² limit.

The approximate areas of each building are as follows:

- Main building 74 m x 24 m = 1776 m²
- Research and link building 35 m x 25 m = 875 m²
- Plant room 20 m x 20 m = 400 m²
- Exhibit 500 m²
- Zoo staff access 400 m²
- Allowance for service route 100 m x 4 m + 10 m x 10 m = 500 m²
- Allowance for revised service roads/extra over around building footprint for access
(74 + 74 + 24 + 24) m x 3 m = 588 m²
- Carpark (previously assessed)
- Ancillary clearing (water storage tanks) 200 m²
- Electrical service route clearing, allow 1200 m²

Total area of disturbance for buildings or ancillary structures = **6439 m²**



Figure 1 - Site plan showing the proposed layout of the conservation centre.

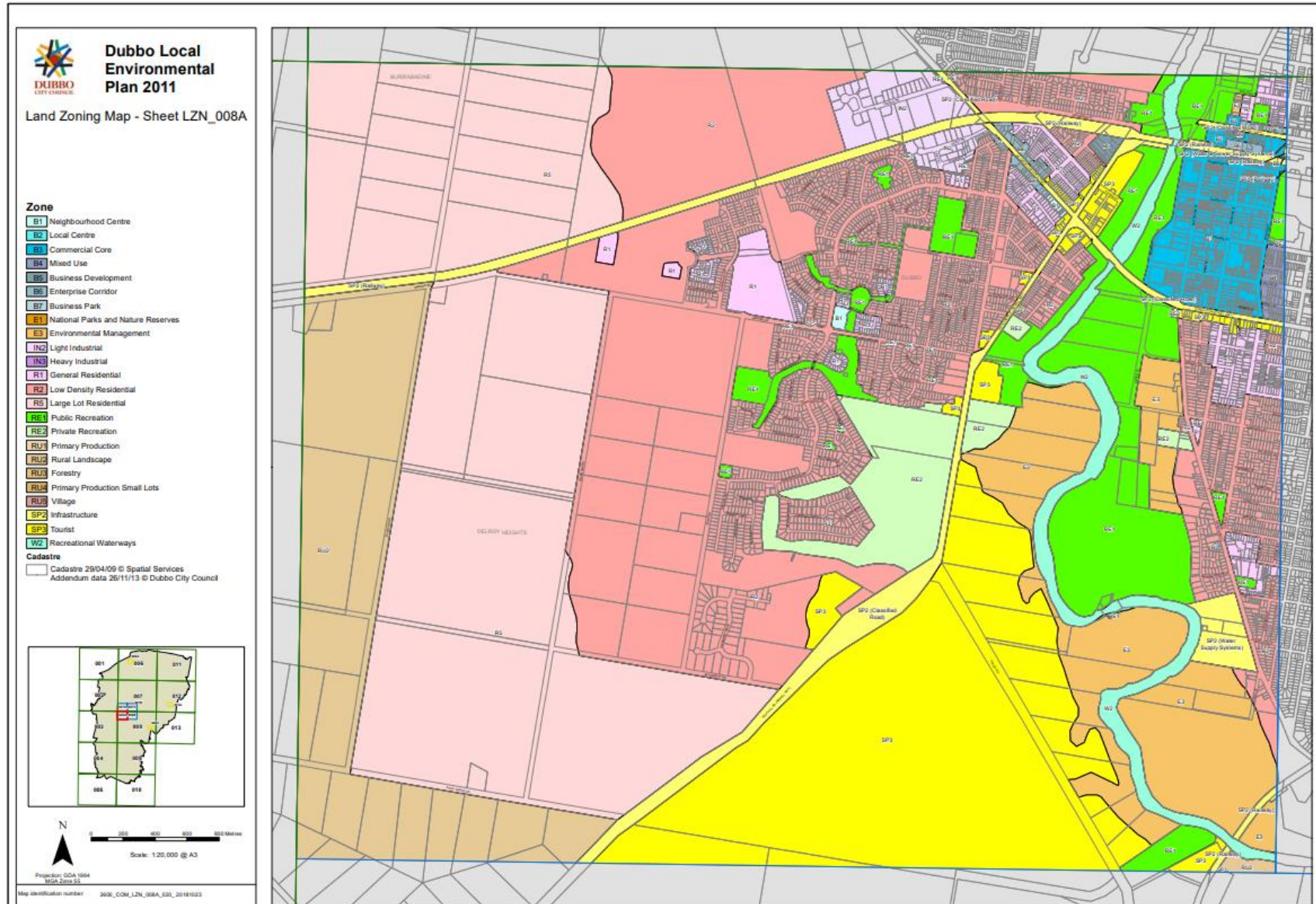


Figure 2 - Dubbo LEP land zoning map

Property details

The proposal will occur within the existing area of the TWPZ within Dubbo Local Government Area (LGA) and is identified on the NSW Planning Portal as follows:

Address: 6R Obley Road Dubbo

Lot 227, DP753233

Dubbo Regional Council

Minimum Lot Size: 100 ha

Land zoning: SP3 Tourist (**Figure 2**)

Overview of methods

A desktop review of available information including vegetation maps and Bionet data was undertaken to identify the native vegetation types and potential threatened species and ecological communities relevant to the site. Predicted species that could be present, including those with suitable habitat at the site, were further assessed by the test of significance (five-part-test) under the BC Act.

A site inspection was undertaken on 04/06/2021 and 08/06/2021 by Christopher Botfield, Renae Hill and Michaela Burns to assess the condition of the native vegetation and habitat within the site and the proposed areas that will be impacted by the development. The following tasks were completed during the site assessment:

- Collation of a flora species list.
- Identification of vegetation communities present
- Search for predicted threatened flora species and potential habitat for predicted threatened fauna, such as rock outcrops, caves and hollow trees.

Author qualifications

This report has been prepared by Christopher Botfield, an Accredited Biodiversity Assessment Method (BAM) Assessor. The author qualifications are summarised in the following table.

Table 1 - Summary of author qualifications

Name / Position	Qualifications / Experience
Christopher Botfield Business Principal	Accredited Biodiversity Assessment Methodology (BAM) assessor (Certification No.: BAAS18023; Valid from: 09/02/2018 to 08/02/2022). Bachelor Environmental Management (B. App. SC PRH) CSU 30+ years of environmental and project management. Cultural resource management and Aboriginal Land management

Limitations and assumptions

The following limitation and assumptions of this study are acknowledged.

Not all flora species will have been detected at the site and additional species other than those listed in this report will be present. Some ephemeral or cryptic flora species may have been dormant and not detected at the time of the survey.

The study did not involve targeted threatened fauna survey, such as spotlighting, trapping, microbat detection or bird surveys. General observations of the presence of suitable habitat only for predicted threatened fauna species was assessed.

Site assessment

Landscape context and bioregion

The proposed site is located within the Talbragar Valley subregion of the Brigalow Belt south bioregion within the confines of the Taronga Western Plains Zoo. The land is zoned as SP3 (Tourist). The Zoo is accessed via Obley Road and is located approximately 3.5 km southwest of the Dubbo CBD.

The site is predominately a regenerated area of bushland dominated by white cypress pine (between 30 - 40 years old) with a mixture of native and weedy understory. The area is relatively flat with a slight slope to the east.

The landscape of the Talbragar Valley subregion consists of residual rocky hills, undulating long slopes and wash plains, wide valley floors with sandy streams. The typical vegetation of the subregion consists of narrow-leaved ironbark, white cypress pine and white box on hills and slopes. Patches of black cypress pine, hill red gum, occasional kurrajong and scrubby acacia in rocky outcrops, with grey box, yellow box and rough-barked apple on valley floors, river red gum on larger streams and river oak on tributaries. Soils are often thin, stony loams, texture contrast soils over most of the landscape with deeper sands and brown earths on valley floors.



Figure 3 - Context map

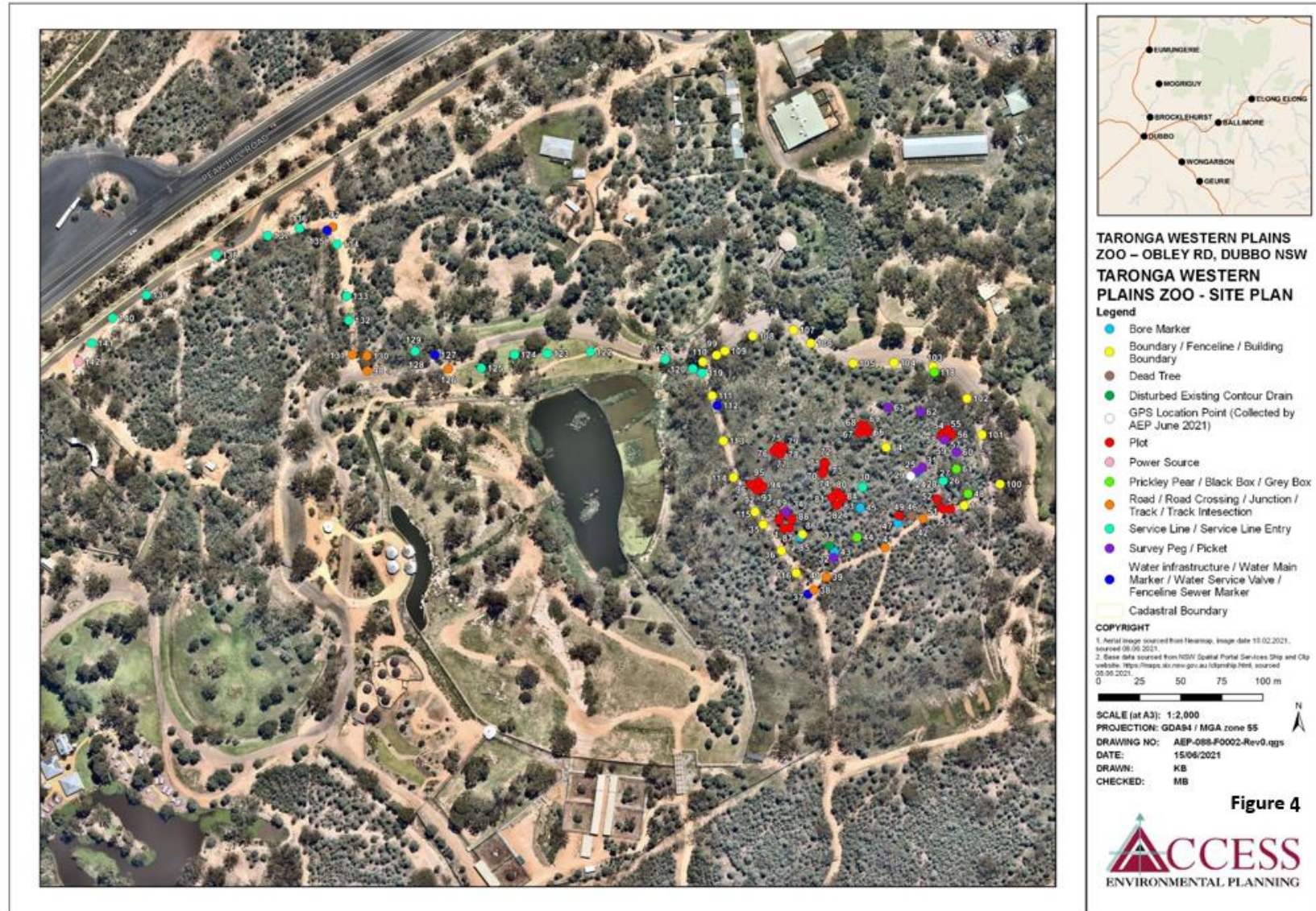


Figure 4 - Proposed area of the site and location of the power infrastructure

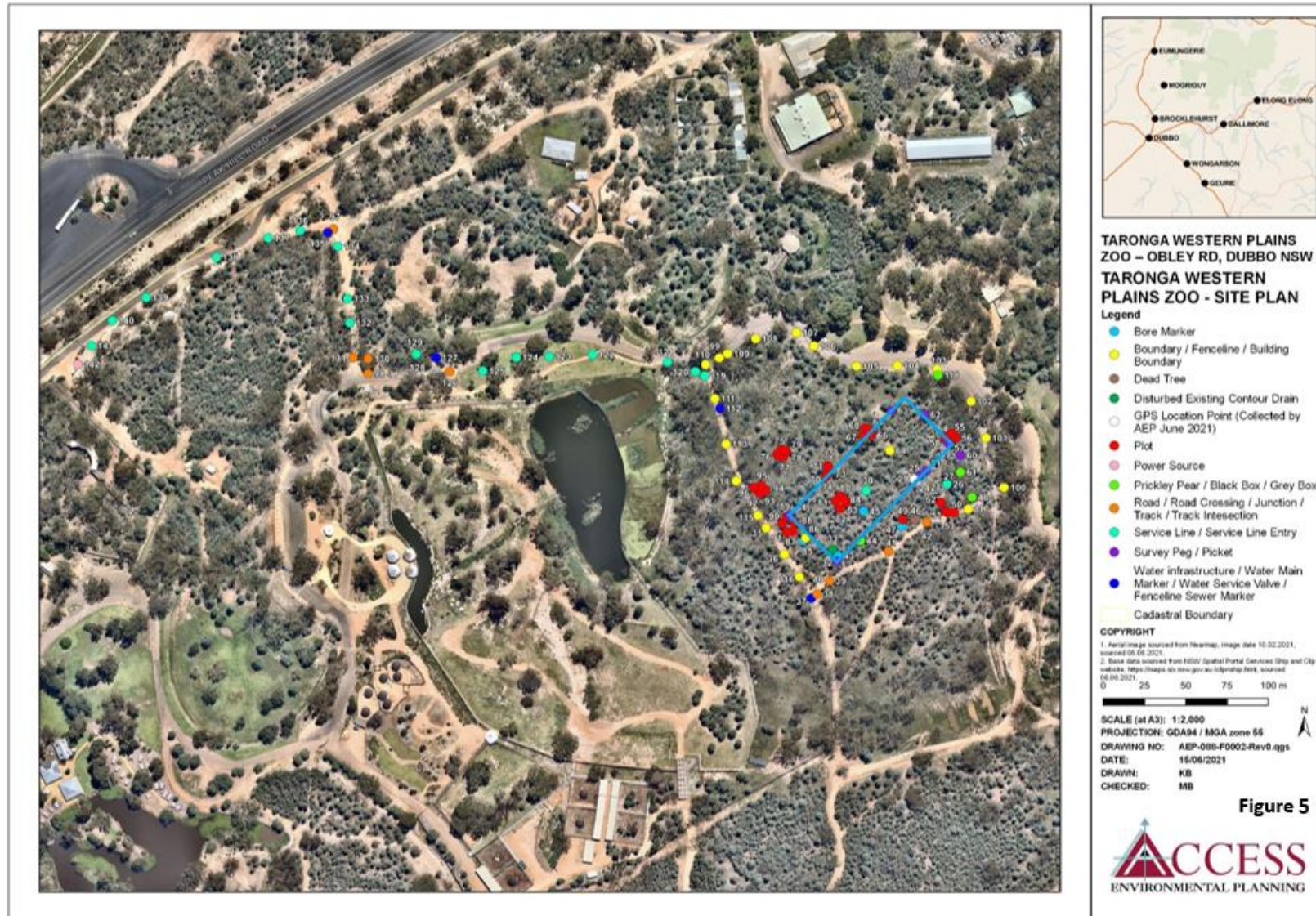


Figure 5 - Subject site with the layout of the main building indicated

Native vegetation types

A total of 45 plant and animal species were recorded during the site assessment, comprising of 26 native plant and 13 introduced/weed species. The species list for the site is provided in **Appendix A**.

The native species present, structure of the vegetation, soil type and landscape position were used to identify the vegetation types according to the NSW Standard Plant Community Type (PCT) classification. The best-fit PCT identified at the site is:

- PCT: 81 Western Grey Box - cypress pine shrub grass shrub tall woodland in the Brigalow Belt South Bioregion

This PCT occurs within the Brigalow Belt South Bioregion. It is often defined as a tall woodland usually containing a sparse shrub layer with a mid-dense to dense ground layer that is dominated by grasses and forbs. This plant community occurs on well drained alluvial brown sandy loam to loam soil derived from sedimentary and volcanic substrates in valley flats and drainage depressions on alluvial plains or rises. Due to past use of the subject site, the age of the white cypress pine trees (30 – 40 years) and lack of vegetation diversity, the site is not considered a good example of a quality PCT.

Small shrubs observed at the site includes *Dodonaea viscosa* with *Juncus usitatus* and *Cheilanthes sieberi* fern also present.

The ground cover species include *Brachyscome* spp., *Xerochrysum bracteatum*, *Carex* spp., *Aristida* spp., *Calotis cuneifolia*, *Poa annua*, *Digitaria milanijana*, *Panicum* spp. and *Austrodanthonia caespitosa*.



Figure 6 - Typical ground cover throughout the site



Figure 7 - Typical vegetation (white cypress pine, sticky hopbush and weed species).

Weeds

There were a number of weeds noted on site (**Appendix A**). The weed that is considered of the most significance is prickly pear (*Opuntia tomentosa*).

Prickly pear (*Opuntia tomentosa*) is listed as a 'Priority Weed' in the Central West, listed under the Biosecurity Act 2015. Managers of the land have an obligation under the act to reduce the impact of the plant on priority assets. Control of this weed would be beneficial for the surrounding ecosystem and the presentation of the area as a tourist attraction. The prickly pear only occurs in an isolated instance.

Other weedy or introduced species noted on site include:

- Kikuyu grass (*Pennisetum clandestinum*)
- Fleabane (*Conyza bonariensis*)
- Deadly Nightshade (*Atropa belladonna*)
- Purple top (*Verbena bonariensis*)
- Spear thistle (*Cirsium vulgare*)
- Prickly pear (*Opuntia tomentosa*)
- Sweet Briar (*Rosa rubiginosa*)
- Dock (*Rumex brownii*)
- Milk thistle (*Silybum marianum*)
- Wild aster (*Aster subulatus*)
- Rice millet (*Piptatherum miliaceum*)
- Canada bluegrass (*Poa compressa*)

Threatened flora

The Bionet Wildlife Atlas database contains records for five threatened plant species previously observed within 10 km of the proposal site.

Table 2 - Threatened plant species observed around the site

Kingdom	Class	Family	Scientific Name	Common Name	NSW status	Comm. status
Plantae	Flora	Asteraceae	<i>Calotis glandulosa</i>	Mauve Burr-daisy	V	V
Plantae	Flora	Fabaceae (Faboideae)	<i>Indigofera efoliata</i>	Leafless Indigo	E1,3	E
Plantae	Flora	Malvaceae	<i>Commersonia procumbens</i>		V	V
Plantae	Flora	Myrtaceae	<i>Homoranthus darwinioides</i>	Fairy Bells	V	V
Plantae	Flora	Orchidaceae	<i>Diuris tricolor</i>	Pine Donkey Orchid	V,P,2	

Additional threatened plant species that are predicted to occur in PCT 81 in the Talbragar Valley subregion:

Dichanthium setosum (bluegrass)

Calotis glandulosa (mauve burr-daisy) – mainly in the Monaro and Kosciuszko regions with older potentially inaccurate records from other isolated places including the Dubbo area. Found in subalpine grasslands and natural temperate grasslands dominated by kangaroo grass. Not likely to be present or persist at the site.

Indigofera efoliata (leafless indigo) – considered now possibly extinct in the wild and found in association with other species that were also not present. No specimens of this plant were observed at the site.

Commersonia procumbens – grows in sandy sites, often pioneering in disturbed areas and along roadsides. Often associated with *Eucalyptus dealbata* and *E. sideroxylon* communities, *Melaleuca uncinata*, mallee eucalypts, acacias and black and white cypress pines. The species was not found during site survey.

Homoranthus darwinioides (fairy bells) – usually grows in gravely sandy soils, associated with black cypress pines, ironbarks and red gums. It was not recorded during the site inspection.

Diuris tricolor (pine donkey orchid) – it grows in sclerophyll forest among grass, on sandy soils, often with native cypress pines (*Callitris spp.*). The species was not found during site survey and is unlikely to be impacted by the development.

Dichanthium setosum (bluegrass) – an upright grass less than 1 m tall with densely hairy flowers, typically associated with heavy basaltic black soils and red-brown loams with clay sub soil. The species was not recorded at the site and will not be impacted by proposed works.

Based on the site survey and assessment of vegetation there should be no impact on potential threatened flora species listed in **Table 2**, as none occur at the site.

Threatened fauna

A search on the Bionet Atlas database returned 29 threatened fauna species that has previously been recorded within 10 km of the site. The likely presence of these species is considered in relation to whether suitable habitat is present. One unused nest was identified on site, however, there was no incidence of old trees containing hollows. A short discussion on the potential threatened fauna species is provided below.

Table 3 - Threatened animal species observed surrounding the site

Kingdom	Class	Family	Scientific Name	Common Name	NSW status	Comm. status
Animalia	Aves	Anseranatidae	<i>Anseranas semipalmata</i>	Magpie Goose	V,P	
Animalia	Aves	Phaethontidae	<i>Phaethon rubricauda</i>	Red-tailed Tropicbird	V,P	C,J
Animalia	Aves	Accipitridae	<i>Circus assimilis</i>	Spotted Harrier	V,P	
Animalia	Aves	Accipitridae	<i>Hieraaetus morphnoides</i>	Little Eagle	V,P	
Animalia	Aves	Falconidae	<i>Falco subniger</i>	Black Falcon	V,P	
Animalia	Aves	Rostratulidae	<i>Rostratula australis</i>	Australian Painted Snipe	E1,P	E
Animalia	Aves	Cacatuidae	<i>Calyptorhynchus lathami</i>	Glossy Black-Cockatoo	V,P,2	
Animalia	Aves	Psittacidae	<i>Glossopsitta pusilla</i>	Little Lorikeet	V,P	
Animalia	Aves	Psittacidae	<i>Lathamus discolor</i>	Swift Parrot	E1,P,3	CE
Animalia	Aves	Psittacidae	<i>Polytelis swainsonii</i>	Superb Parrot	V,P,3	V
Animalia	Aves	Strigidae	<i>Ninox connivens</i>	Barking Owl	V,P,3	
Animalia	Aves	Strigidae	<i>Ninox strenua</i>	Powerful Owl	V,P,3	
Animalia	Aves	Climacteridae	<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	V,P	

Animalia	Aves	Acanthizidae	<i>Chthonicola sagittata</i>	Speckled Warbler	V,P	
Animalia	Aves	Meliphagidae	<i>Anthochaera phrygia</i>	Regent Honeyeater	E4A,P	CE
Animalia	Aves	Meliphagidae	<i>Epthianura albifrons</i>	White-fronted Chat	V,P	
Animalia	Aves	Meliphagidae	<i>Melithreptus gularis gularis</i>	Black-chinned Honeyeater (eastern subspecies)	V,P	
Animalia	Aves	Pomatostomidae	<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler (eastern subspecies)	V,P	
Animalia	Aves	Neosittidae	<i>Daphoenositta chrysoptera</i>	Varied Sittella	V,P	
Animalia	Aves	Petroicidae	<i>Melanodryas cucullata cucullata</i>	Hooded Robin (south-eastern form)	V,P	
Animalia	Aves	Petroicidae	<i>Petroica phoenicea</i>	Flame Robin	V,P	
Animalia	Aves	Estrildidae	<i>Stagonopleura guttata</i>	Diamond Firetail	V,P	
Animalia	Mammalia	Phascolarctidae	<i>Phascolarctos cinereus</i>	Koala	V,P	V
Animalia	Mammalia	Petauridae	<i>Petaurus norfolcensis</i>	Squirrel Glider	V,P	
Animalia	Mammalia	Pteropodidae	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V,P	V
Animalia	Mammalia	Emballonuridae	<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	V,P	
Animalia	Mammalia	Vespertilionidae	<i>Chalinolobus picatus</i>	Little Pied Bat	V,P	
Animalia	Mammalia	Vespertilionidae	<i>Nyctophilus corbeni</i>	Corben's Long-eared Bat	V,P	V
Animalia	Mammalia	Miniopteridae	<i>Miniopterus orianae oceanensis</i>	Large Bent-winged Bat	V,P	

Magpie Goose. Magpie geese are widespread in northern Australia, where they may congregate in huge flocks. The species tends to prefer wetlands to breed. The site does not contain any wetlands or wet grasslands that are the preferred habitat of this bird.

Red-tailed Tropicbird. These birds are usually found in tropical and subtropical areas near the coast. As the site is not located on the coast this bird is unlikely to occur in this area.

Spotted Harrier. The spotted harrier occurs throughout the Australian mainland, except in densely forested or wooded habitats of the coast, escarpment and ranges. It occurs in grassy open woodlands which occur within the area, meaning this species may occur within the construction site.

Little Eagle. This species is found throughout the Australian mainland excepting the most densely forested parts of the Dividing Range escarpment. Its habitat is often open eucalypt forest, woodland or open woodland. The subject site is considered an open woodland meaning this species may occur at the site.

Black Falcon. The black falcon is widely, but sparsely, distributed in New South Wales, mostly occurring in inland regions. Given that falcons are highly mobile, commonly travelling hundreds of kilometres, this species would not be impacted by the works.

Australian Painted Snipe. The Australian painted snipe is usually found in shallow inland wetlands, either freshwater or brackish, that are either permanently or temporarily filled. As this type of habitat is not found in the subject site this species is unlikely to be present.

Glossy Black-Cockatoo. The glossy black-cockatoo lives in coastal woodlands and drier forest areas, open inland woodlands, or timbered watercourses where its main food source, the casuarina (she-oak) is common. Isolated casuarinas were at the site but the specimens were very young or in poor condition and the impact of removing these would be negligible.

Little Lorikeet. The little lorikeet is distributed widely across the coastal and Great Divide regions of eastern Australia from Cape York to South Australia. It forages primarily in the canopy of open *Eucalyptus* Forest and woodland, yet also finds food in *Angophora*, *Melaleuca* and other tree species. Few eucalypts are to be disturbed in proposed works so impact to this species would be minimal.

Swift Parrot. In NSW it mostly occurs on the coast and southwest slopes. They occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. The subject site does not have prolific food resources which reduces its suitability as habitat for this bird species.

Superb Parrot. Occurring throughout eastern inland NSW. Inhabiting box-gum, box-cypress-pine and Boree woodlands and river red gum forest. White cypress pines occur throughout the subject site but the majority of these trees were small diameter, resulting in reduced habitat value. While this species may occasionally visit the area to forage it is unlikely to rely on the resources existing at the site. The small extent of the proposal and similar surrounding vegetation will result in minimal impact to the superb parrot.

Barking Owl. This species occurs throughout Australia, except for the central arid regions. It prefers sites with dense foliage and uses hollows in large old trees. As the Dubbo region is considered semi-arid and site habitat features are limited this species is unlikely to occur.

Powerful Owl. The Powerful Owl is endemic to eastern and south-eastern Australia, mainly on the coastal side of the Great Dividing Range. It roosts in dense vegetation by day, can require a sizeable hunting range and needs very large hollows, typically in trees over 150 years old. As Dubbo is located in central NSW and site features do not provide adequate shelter provisions, this owl is unlikely to occur within the area.

Brown Treecreeper (eastern subspecies). The Brown Treecreeper is endemic to eastern Australia and occurs in eucalypt forests and woodlands of inland plains and slopes of the Great Dividing Range. The Dubbo region is at the western extent of the known range for the eastern subspecies and the wooded area of the site contains only a small number of eucalypts in generally poor condition. Therefore the brown treecreeper is unlikely to be present at the site or be impacted by planned works.

Speckled Warbler. The Speckled Warbler lives in a wide range of *Eucalyptus* dominated communities that have a grassy understorey, often on rocky ridges or in gullies. The Speckled Warbler has a patchy distribution throughout south-eastern Queensland and the eastern half of NSW. This species may be found on site due to the grassy understory but the impact should be minimal due to the small number of mature trees being cleared.

Regent Honeyeater. The Regent Honeyeater inhabits temperate woodlands and open forests of the inland slopes of south-east Australia. It feeds mainly on nectar from the small number of eucalypts that produce high volumes like the mugga ironbark, yellow box, white box and swamp mahogany as

well as mistletoes and some acacias. None of these species were at the site making it unlikely to support even the foraging behaviour of the regent honeyeater.

White-fronted Chat. The White-fronted Chat is found across the southern half of Australia. This species is usually found foraging on bare or grassy ground in wetland areas, singly or in pairs. As the site is not a wetland this bird is unlikely to be present.

Black-chinned Honeyeater (eastern subspecies). This species extends south from central Queensland, through NSW, Victoria into south-eastern South Australia. Occupies mostly upper levels of drier open forests or woodlands dominated by box and ironbark eucalypts. These primary tree species are not prominent on the site, meaning this bird should not be impacted by works.

Grey-crowned Babbler (eastern subspecies). This species occurs on the western slopes of the Great Dividing Range, and on the western plains reaching as far as Louth and Balranald. It also occurs in woodlands in the Hunter Valley and in several locations on the north coast of NSW. It may be extinct in the southern, central and New England tablelands. Inhabits open box-gum woodlands on the slopes, and box-cypress-pine and open box woodlands on alluvial plains. It may be present at the site but woody vegetation to be removed is predominantly young white cypress pine stems, larger eucalypts will be retained where possible and similar flora will remain adjacent to the site.

Varied Sittella. The Varied Sittella is sedentary and inhabits most of mainland Australia except the treeless deserts and open grasslands. Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee and *Acacia* woodland. The footprint of proposed work is small relative to the available vegetation in the vicinity and any local occurrence of this bird is unlikely to be significantly impacted.

Hooded Robin (south-eastern form). Widespread but uncommon and found in lightly timbered woodland, mainly dominated by acacia and/or eucalypts. The existing plant community will still be represented in vegetation near the site that will not be impacted by works so the proposal is unlikely to have any adverse effect on any local occurrence of the species.

Flame Robin. It is likely that there are two separate populations in NSW, one in the Northern Tablelands, and another ranging from the Central to Southern Tablelands. The flame robin prefers clearings or areas with open understoreys. The understorey of the subject site is quite dense, making it less suitable as habitat for the bird.

Diamond Firetail. The diamond firetail is endemic to south-eastern Australia. Found in grassy eucalypt woodlands, including box-gum woodlands and snow gum *Eucalyptus pauciflora* woodlands. It also occurs in open forest, mallee, temperate grasslands and lightly wooded farmland. It feeds exclusively on the ground utilising grass and herb leaves and seeds and insects. As many site features are not those preferred by the diamond firetail and proposed works will only remove a small area of woody vegetation and groundcover, with similar remaining adjacent vegetation, the species impact would be negligible.

Koala. Koalas have not been sighted at the proposed development site. Dubbo is not listed as a Local Government Area (LGA) where koalas commonly occur and the State Environmental Planning Policy (SEPP) for Koala Habitat Protection does not apply. The removal of predominantly young white cypress pine stems in the proposed small area would not significantly impact any local population.

Squirrel Glider. The species is widely though sparsely distributed in eastern Australia, from northern Queensland to western Victoria. Prefers mixed species stands with a shrub or acacia midstorey. As this type of habitat does not occur in the subject site this species is unlikely to be present.

Grey-headed Flying-fox. Grey-headed flying-foxes are generally found within 200 km of the eastern coast of Australia, meaning they are unlikely to be at the site. Also, trees at the site are young, generally small diameter with no significant canopy development, which is the preferred roosting habitat. Infrequent or incidental occurrence may happen in times of natural resource shortage.

Bats. The bats that may occur in the area include yellow-bellied sheath-tail-bat, little pied bat, Corben's long-eared bat and large bent-winged bat. The large bent-winged bat tends to prefer to roost in caves or other cave like structures. The other species tend to prefer a roosting in hollows of large eucalyptus trees. As there were no hollows or caves indicated during the site visit these bats are unlikely to occur within the area.

Threatened ecological communities

The vegetation community identified at the site is PCT 81: *Western Grey Box - cypress pine shrub grass shrub tall woodland in the Brigalow Belt South Bioregion*. This PCT could be partly associated with the inland grey box woodland in the Riverina, NSW South Western Slopes, Cobar Penneplain, Nandewar and Brigalow Belt South bioregions, threatened ecological community (TEC) listed both under the Environmental Protection and Biodiversity Conservation (EPBC) Act 1999 and the BC Act.

This TEC, which has grey box as the most characteristic tree species, is not represented at the site because tree species are predominantly white cypress pine with only isolated grey box. Also, the property where the site is located has a history of industrial type land use (air force base and waste disposal) and vegetation is predominantly immature regrowth.

Aquatic habitat

Threatened aquatic species and ecological communities are listed under the Fisheries Management Act 1995 if they face a very high risk of extinction in the near future as determined by the Fisheries Scientific Committee. The nearest major watercourse is The Macquarie River, approximately 1 km east of the site. The site inspection has confirmed the absence of any watercourses or riparian habitat near the development site, and there are no expected impacts to aquatic habitat or threatened aquatic species or ecosystems.

Impact assessment

Development footprint and vegetation impact

The development will require clearing of trees for the conservation centre building and ancillary infrastructure. The total area of impact will be approximately 6439 m². This will require the removal of all the vegetation within this area, which is approximately 50% of the assessed site (**Figure 1**).

Table 4 - Summary of the development footprint

Description	Impact on vegetation	Approximate area of impact
Main building	Vegetation within the area of the main building will be cleared. 74 x 24 m	1766 m ²
Research and link	Vegetation within this area will be cleared. 35 x 25 m	875 m ²
Plantroom	Vegetation within the site of the plantroom will be cleared. 20 x 20 m.	400 m ²
Exhibit (inc. access path)	Vegetation will be cleared within this area.	500 m ²
Zoo staff access	Vegetation will be cleared within the site of the staff access.	400 m ²

Allowance for service route	The vegetation of the sizes of 100 x 4 m and 10 x 10 m will be cleared.	500 m ²
Allowance for revised service roads/ extra around building footprint for access	This will require clearing of two 74 x 3 m tracks and two 24 x 3 m tracks.	588 m ²
Ancillary clearing	This area will include water tanks and other infrastructure.	200 m ²
Electrical service route clearing	The vegetation will be cleared from this area. 400 x 3 m.	1200 m ²
Total		6439 m²

Threatened species and communities

The proposal will not impact any threatened flora species as none were recorded at the site. The combination of the site survey and the review of habitat requirements for predicted fauna species found that habitat is not suitable for the majority of the species. Those that may utilise the site will not be significantly impacted as the disturbance to vegetation is small in extent and similar vegetation will remain in surrounding areas.

The plant community type which best described vegetation at the subject type is PCT 81: *Western Grey Box - cypress pine shrub grass shrub tall woodland in the Brigalow Belt South Bioregion*. No threatened EEC will be impacted by the development.

The Test of Significance (under the Biodiversity Conservation Act 2016) for potential threatened species is provided the following section (**Test of significance**). In summary, due to the small size of the development, and the absence of specialised habitat features such as rock outcrops, caves and large hollow-bearing trees in or close to the development site, the test of significance concluded there is unlikely to be any impacts to threatened fauna and loss of their habitat will be negligible.

Biodiversity Offset Scheme thresholds

The Biodiversity Conservation Regulation 2017 sets out threshold levels for when the Biodiversity Offsets Scheme will be triggered (refer to <https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/biodiversity-offsets-scheme/entry-requirements>). The threshold has two elements:

- whether the amount of native vegetation being cleared exceeds an area threshold
- whether the impacts occur on an area mapped on the Biodiversity Values Map published by the Environment Agency Head.

If clearing and other impacts exceeds either trigger, the Biodiversity Offset Scheme applies to the proposed development, including biodiversity impacts prescribed by clause 6.1 of the Biodiversity Regulation 2017.

The relevant native vegetation clearing area threshold applicable to the development is 1 hectare (ha) (see **Table 5**). The area of native vegetation clearing required for built development components has been calculated as approximately **6500 m²**. In regard to bushfire mitigation, the building design and materials should be such that the required asset protection zone (APZ) maintains the total area of modified vegetation at less than the 1 ha threshold, to prevent triggering the BOS. The planned area of native vegetation clearing is under the area threshold for the NSW Biodiversity Offset Scheme.

Table 5 - Native vegetation clearing thresholds by lot size.

Minimum lot size for the zoning	Native vegetation clearing threshold for the biodiversity Offset Scheme. If an area greater then this area is cleared
Less than 1 ha	0.25 ha or more
1 ha to less than 40 ha	0.5 ha or more
40 ha to less than 1000 ha	1 ha or more
1000 ha or more	2 ha or more

If a development exceeds the relevant area threshold below, the Biodiversity Offset Scheme is triggered and further assessment is required.

In relation to the Biodiversity Values Map. If any development is proposed on the purple areas, this would trigger an assessment under the NSW Biodiversity Offset Scheme. The development is not located on land identified on Biodiversity Values Map (refer to purple areas in **Figure 8**). The nearest mapped land is along the Macquarie River.

In relation to the Test of Significance. When the BOS thresholds are not triggered by local developments and the BOS does not apply, proponents are required to carry out a test of significance to ensure environmental impacts have been adequately considered. The test of significance for potential threatened species is shown below. Given the small size of the development and the fact that no threatened flora was found at the site, the test of significance concluded that there will be no significant impacts to any threatened species or ecological communities as a result of the development.

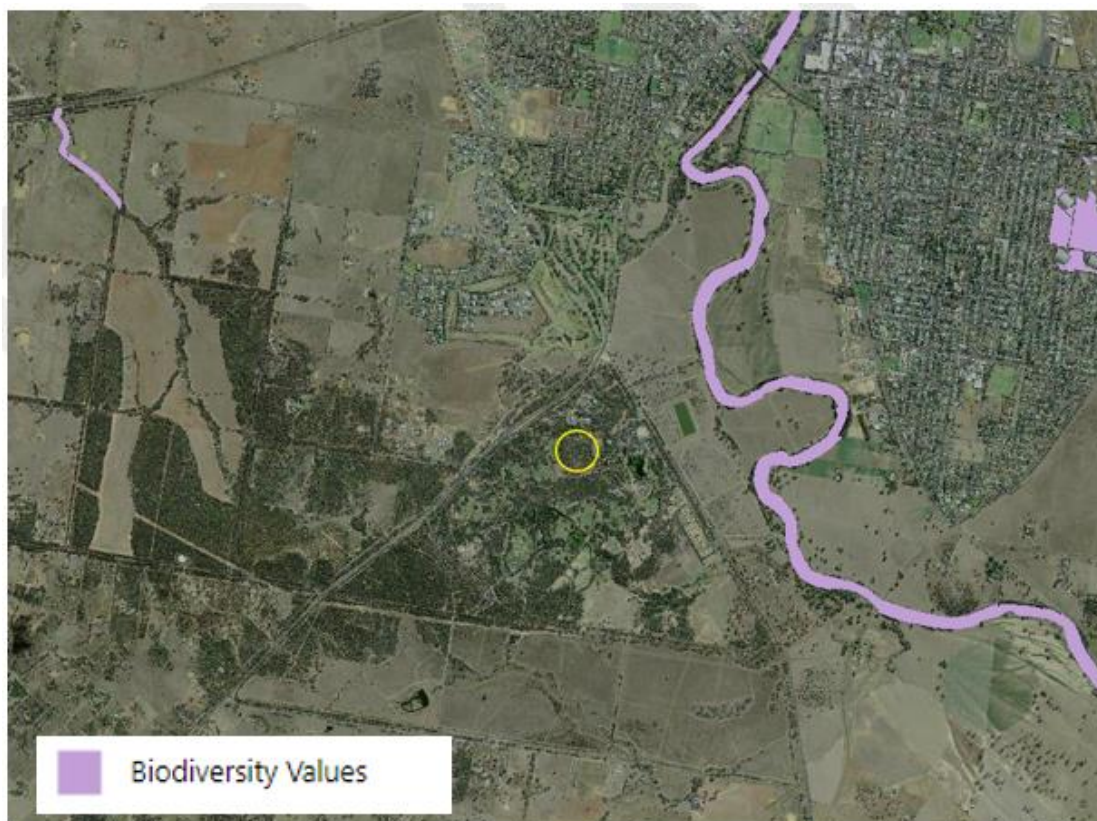


Figure 8 - Biodiversity Values Map near the subject site

Test of significance

The assessment of significance under section 7.3 of the BC Act is used to determine whether a proposed development or activity is likely to significantly affect threatened species, their habitats or ecological communities. Considerations are made for the current proposal, in relation to potential threatened species and communities relevant to the site (as discussed above). The responses below should be interpreted in combination with the summary information for each species above.

(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction

None of the potential species listed under the Bionet Atlas were found during the field survey. There are seven threatened species that have been sighted closest to the site, according to the Bionet Atlas. These species were the little lorikeet, koala, grey crowned babbler, grey headed flying fox, little eagle, regent honeyeater and swift parrot. Even though no threatened species were spotted during the site inspection their presence in the area cannot be discounted.

As discussed above the site does not include features required for habitat of many of the potential threatened fauna species and they are unlikely to rely on vegetation the site. For those that may use the area (spotted harrier, little eagle, superb parrot, speckled warbler, regent honeyeater and grey-crowned babbler (eastern subspecies)), a large number of small trees will need to be removed for construction of the conservation centre. Due to the limited number of mature trees, no hollows or active nests within the site, the small extent of proposed works and similar remnant vegetation in adjacent areas impacts to these species would be minimal.

Overall, the small area of the proposal in the landscape context, means that any of the locally-occurring fauna species should be able to move and escape disturbance, therefore avoiding impact or injury. Based on these considerations and the summary for each species provided, the proposal is highly unlikely to significantly affect the lifecycle of any of the potentially-occurring threatened fauna species, such that a viable local population would be placed at risk of extinction.

(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

- (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or***
- (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,***

The composition of plant species and history of site disturbance mean the vegetation at the site is not part of an Endangered Ecological Community listed under the BC Act or EPBC Act.

(c) in relation to the habitat of a threatened species or ecological community:

- (i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and***
- (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and***
- (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,***

The extent of native vegetation that will be impacted is less than 1 ha (approximate buildings footprint 6500 m²). The area to be cleared contains existing white cypress pine trees (30-40 years old) with an understorey of hopbush, grasses and some forbs. The proposal will contribute to a small extent of

additional fragmentation in the local area but will not affect the ability of wildlife to move through the landscape. In relation to the surrounding vegetation, the clearing of this area will not cause a large amount of habitat loss. No threatened flora species were observed on the site inspection.

In relation to potentially occurring threatened fauna there are no hollows but one inactive nest. The small size of the development (less than 1ha) is negligible in the landscape context and existing habitat quality is limited due to lack of diversity and previous disturbance. Large areas of woody vegetation will remain around the site and the development would not cause significant loss of habitat.

The proposal will not remove, modify, fragment or isolate habitat for any of the possible threatened species to such an extent that their long-term survival would be at risk.

(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),

The proposal is not near and will not affect any declared areas of outstanding biodiversity value.

(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

The proposal represents a very small contribution to the threatening process 'human induced climate change', 'vegetation clearing' and 'removal of dead wood and dead trees'. Recommendations have been made to retain larger trees, both alive and dead, where possible. The development will contribute to human induced climate change through use of diesel powered equipment and removal of some woody vegetation. These effects will be very small because of the scale of the project and will not add significantly to negative impacts. Even though the contribution of the proposal to these threatening process does exist the impact will be minimal.

Conclusion and recommendations

The site assessment indicated a total of 39 plant species, comprising of 27 native species and 12 introduced/weed species (**Appendix A**). A number of weeds are present including prickly pear (*Opuntia tomentosa*) which is considered a priority weed of the Central West (**Appendix B**) and needs to be addressed during works.

The assessment finds that, of the threatened species that have been recorded locally, there is limited areas that provide suitable habitat and overall there is expected to be no significant impacts to any of these threatened fauna species. Additionally, there are no specialised habitat features such as rock outcrops, caves or large hollow-bearing trees close to the development site.

The following recommendations are made to minimise impacts to the habitat of surrounding the site, whilst still facilitating the development.

1. Large dead trees and mature trees should be retained where possible, unless they are considered dangerous.
2. A weed management plan, focusing on the control and removal of prickly pear (*Opuntia tomentosa*), is warranted to reduce the risk of spreading the weed while improving the condition of the surrounding ecosystem.
3. Retention of as much native vegetation as possible should be an important consideration for the current development and ongoing maintenance of the area.
4. The proposal does not trigger any of the thresholds for entry into the NSW Biodiversity Offset Scheme and this assessment finds that entry into the Biodiversity Offset Scheme is not required.

References

Dubbo Local environmental Plan 2011,

<https://legislation.nsw.gov.au/view/html/inforce/current/epi-2011-0580> Accessed: 17/06/2021

Threatened species found in Talbragar Valley IBRA sub-region

<https://www.environment.nsw.gov.au/threatenedspeciesapp/cmaSearchResults.aspx?SubCmaId=263> Accessed 16/06/2021

Bionet Atlas

https://www.environment.nsw.gov.au/atlaspublicapp/UI_Modules/ATLAS_/AtlasSearch.aspxv

Accessed 15/06/2021

Biodiversity Offset Scheme <https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity-offsets-scheme/about-the-biodiversity-offsets-scheme/when-does-bos-apply>

Accessed 18/06/2021

Biodiversity Values Map and Threshold Tool

<https://www.lmbc.nsw.gov.au/Maps/index.html?viewer=BOSETMap> Accessed 17/06/21

Appendix A: Species noted during site inspection

Common Name	Scientific Name
Trees	
White cypress-pine	<i>Callitris glaucophylla</i>
Grey box	<i>Eucalyptus microcarpa</i>
Mistletoe	
Australian pine tree	<i>Casuarina equisetifolia</i>
River red gum	<i>Eucalyptus camaldulensis</i>
Belah	<i>Casuarina cristata</i>
Wilga	<i>Geijera parviflora</i>
Ferns	
Rock fern	<i>Cheilanthes sieberi</i>
Shrubs	
Sticky Hop Bush	<i>Dodonaea viscosa</i>
Tussock rush	<i>Juncus aridicola</i>
Grasses and Forbs	
Swan River Daisy	<i>Brachyscome spp.</i>
Paper Daisy	<i>Xerochrysum bracteatum</i>
Umbrella sedge	<i>Cyperus eragrostis</i>
Rough saw sedge	<i>Gahnia aspera</i>
Three awn speargrass	<i>Aristida vagans</i>
Purple Burr-daisy	<i>Calotis cuneifolia</i>
Winter grass	<i>Poa annua</i>
Tall finger grass	<i>Digitaria milanjiana</i>
Panic grass	<i>Panicum spp</i>
Longleaf wallaby grass	<i>Austrodanthonia longifolia</i>
Lesser joyweed	<i>Alternanthera denticulata</i>
Amulla	<i>Myoporum debile</i>
Sticky everlasting	<i>Xerochrysum viscosum</i>
Tall blue bell	<i>Wahlenbergia stricta</i>
Grassland bindweed	<i>Convolvulus graminetinus</i>
Brown's lovegrass	<i>Eragrostis brownii</i>
Introduces species	
Kikuyu grass	<i>Pennisetum clandestinum</i>
Weeds	
Fleabane	<i>Conyza bonariensis</i>
Deadly Nightshade	<i>Atropa belladonna</i>
Purple top	<i>Verbena bonariensis</i>
Spear thistle	<i>Cirsium vulgare</i>
Narrawa burr	<i>Solanum cinereum</i>
Prickly pear	<i>Opuntia tomentosa</i>
Sweet Briar	<i>Rosa rubiginosa</i>
Swamp dock	<i>Rumex brownii</i>
Milk thistle	<i>Silybum marianum</i>
Wild aster	<i>Aster subulatus</i>
Rice millet	<i>Piptatherum miliaceum</i>
Canada bluegrass	<i>Poa compressa</i>
Animals	
Kookaburra	<i>Dacelo</i>
Eastern Grey Kangaroo	<i>Macropus giganteus</i>
Butcherbird	<i>Cracticus torquatus</i>
Magpie-lark	<i>Grallina cyanoleuca</i>
Noisy miner	<i>Manorina melanocephala</i>
Red Wattlebird	<i>Anthochaera carunculata</i>

Appendix B: Priority weeds for the Central West

Note: this region includes the local council areas of Bogan (lower), Coonamble, Dubbo Regional, Forbes, Gilgandra, Lachlan, Narromine, Parkes, Warren, Warrumbungle and Weddin.

Weed	Duty
All plants	General Biosecurity Duty <i>All plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.</i>
African boxthorn <i>Lycium ferocissimum</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Alligator weed <i>Alternanthera philoxeroides</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Alligator weed <i>Alternanthera philoxeroides</i>	Biosecurity Zone <i>The Alligator Weed Biosecurity Zone is established for all land within the state except land in the following regions: Greater Sydney; Hunter (but only in the local government areas of City of Lake Macquarie, City of Maitland, City of Newcastle or Port Stephens). Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone</i>
Anchored water hyacinth <i>Eichhornia azurea</i>	Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i>
Arrowhead <i>Sagittaria calycina</i> var. <i>calycina</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.</i> This Regional Recommended Measure applies to all species of <i>Sagittaria</i>
Athel pine <i>Tamarix aphylla</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Athel pine <i>Tamarix aphylla</i>	Regional Recommended Measure <i>Exclusion zone: all waterways and riparian areas in the region. Core infestation area: whole region except for the exclusion zone. Whole region: The plant should not be bought, sold, grown, carried or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should mitigate of plant being introduced to their land. Land managers reduce impacts from the plant on priority assets.</i>
Bellyache bush <i>Jatropha gossypifolia</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Bitou bush <i>Chrysanthemoides monilifera</i> subsp. <i>rotundata</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Bitou bush <i>Chrysanthemoides monilifera</i> subsp. <i>rotundata</i>	Biosecurity Zone <i>The Bitou Bush Biosecurity Zone is established for all land within the</i>

	State except land within 10 kilometres of the mean high water mark of the Pacific Ocean between Cape Byron in the north and Point Perpendicular in the south. <i>Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone</i>
Black knapweed <i>Centaurea x moncktonii</i>	Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i>
Black willow <i>Salix nigra</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Blackberry <i>Rubus fruticosus</i> species aggregate	Prohibition on dealings <i>Must not be imported into the State or sold</i> All species in the <i>Rubus fruticosus</i> species aggregate have this requirement, except for the varieties Black Satin, Chehalem, Chester Thornless, Dirksen Thornless, Loch Ness, Murrindindi, Silvan, Smooth Stem, and Thornfree
Blue heliotrope <i>Heliotropium amplexicaule</i>	Regional Recommended Measure Exclusion zone: Weddin local government area. Core infestation area: whole region except for exclusion zone. <i>Whole region: The plant should not be bought, sold, grown, carried or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets. Land managers should mitigate the risk of the plant being introduced to their land.</i>
Boneseed <i>Chrysanthemoides monilifera</i> subsp. <i>monilifera</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Boneseed <i>Chrysanthemoides monilifera</i> subsp. <i>monilifera</i>	Control Order Boneseed Control Zone: Whole of NSW <i>Boneseed Control Zone (Whole of NSW): Owners and occupiers of land on which there is boneseed must notify the local control authority of new infestations; immediately destroy the plants; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of boneseed must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant.</i>
Boxing glove cactus <i>Cylindropuntia fulgida</i> var. <i>mamillata</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Boxing glove cactus <i>Cylindropuntia fulgida</i> var. <i>mamillata</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of new weeds being introduced to their land. Land managers should mitigate spread from their land.</i> This Regional Recommended Measure applies to all species of <i>Cylindropuntia</i> except <i>Cylindropuntia rosea</i> (Hudson pear)
Bridal creeper <i>Asparagus asparagoides</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i> *this requirement also applies to the Western Cape form of bridal creeper
Bridal creeper <i>Asparagus asparagoides</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. The plant should not be bought, sold, grown, carried or</i>

	released into the environment. Land managers to reduce impacts from the plant on priority assets.
Bridal veil creeper <i>Asparagus declinatus</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Broomrapes <i>Orobanche</i> species	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries All species of Orobanche are Prohibited Matter in NSW, except Clover broomrape, Orobanche minor and Australian broomrape, Orobanche cernua var. australiana.
Burr ragweed <i>Ambrosia confertiflora</i>	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment.
Cabomba <i>Cabomba caroliniana</i>	Prohibition on dealings Must not be imported into the State or sold
Cane cactus <i>Austrocylindropuntia cylindrica</i>	Prohibition on dealings Must not be imported into the State or sold All species in the Austrocylindropuntia genus have this requirement
Cape broom <i>Genista monspessulana</i>	Prohibition on dealings Must not be imported into the State or sold
Carrion flower <i>Orbea variegata</i>	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment.
Cat's claw creeper <i>Dolichandra unguis-cati</i>	Prohibition on dealings Must not be imported into the State or sold
Cat's claw creeper <i>Dolichandra unguis-cati</i>	Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. The plant should not be bought, sold, grown, carried or released into the environment. Land managers to reduce impacts from the plant on priority assets.
Chilean needle grass <i>Nassella neesiana</i>	Prohibition on dealings Must not be imported into the State or sold
Chilean needle grass <i>Nassella neesiana</i>	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Chinese violet <i>Asystasia gangetica</i> subsp. <i>micrantha</i>	Control Order Owners and occupiers of land on which there is Chinese violet must notify the local control authority for the area if the Chinese violet is part of a new infestation on the land, destroy all Chinese violet on the land ensuring that subsequent generations of Chinese violet are destroyed; and keep the land free of Chinese violet. A person who deals with a carrier of Chinese violet must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant on the land, or on or in a carrier.

Climbing asparagus <i>Asparagus africanus</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Climbing asparagus fern <i>Asparagus plumosus</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Common pear <i>Opuntia stricta</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Common pear <i>Opuntia stricta</i>	Regional Recommended Measure <i>Whole region: Land managers should mitigate the risk of new weeds being introduced to their land. Core infestations: Land managers should mitigate spread from their land.</i> *This Regional Recommended Measure applies to all species of Opuntia except for Opuntia ficus-indica (Indian fig)
Coolatai grass <i>Hyparrhenia hirta</i>	Regional Recommended Measure <i>Exclusion zone: whole region except for the core infestation area of the Warrumbungle and Coonamble Shire Council areas</i> <i>Whole region: The plant should not be bought, sold, grown, carried or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets. Land managers should mitigate the risk of the plant being introduced to their land.</i>
East Indian hygrophila <i>Hygrophila polysperma</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.</i>
Eurasian water milfoil <i>Myriophyllum spicatum</i>	Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i>
Eve's needle cactus <i>Austrocylindropuntia subulata</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i> All species in the Austrocylindropuntia genus have this requirement
Fireweed <i>Senecio madagascariensis</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Fireweed <i>Senecio madagascariensis</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment.</i>
Flax-leaf broom <i>Genista linifolia</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Foxtail fern <i>Asparagus densiflorus</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Frogbit <i>Limnobium laevigatum</i>	Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i> All species of Limnobium are Prohibited Matter
Gamba grass <i>Andropogon gayanus</i>	Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or</i>

	suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Giant reed <i>Arundo donax</i>	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. Land managers should mitigate spread from their land. The plant should not be bought, sold, grown, carried or released into the environment.
Gorse <i>Ulex europaeus</i>	Prohibition on dealings Must not be imported into the State or sold
Grey sallow <i>Salix cinerea</i>	Prohibition on dealings Must not be imported into the State or sold
Ground asparagus <i>Asparagus aethiopicus</i>	Prohibition on dealings Must not be imported into the State or sold
Harrisia cactus <i>Harrisia species</i>	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment.
Hawkweeds <i>Pilosella species</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries All species in the genera <i>Pilosella</i> and <i>Hieracium</i> are Prohibited Matter except for <i>Hieracium murorum</i>.
Honey locust <i>Gleditsia triacanthos</i>	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. Land managers should mitigate spread from their land. The plant should not be bought, sold, grown, carried or released into the environment.
Hudson pear <i>Cylindropuntia pallida</i>	Prohibition on dealings Must not be imported into the State or sold
Hudson pear <i>Cylindropuntia pallida</i>	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment.
Hydrocotyl <i>Hydrocotyle ranunculoides</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Hygrophila <i>Hygrophila costata</i>	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Hymenachne <i>Hymenachne amplexicaulis</i> and hybrids	Prohibition on dealings Must not be imported into the State or sold
Hymenachne <i>Hymenachne amplexicaulis</i> and hybrids	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Johnson grass <i>Sorghum halepense</i>	Regional Recommended Measure Land managers should mitigate the risk of new weeds being

	introduced to their land. Land managers should mitigate spread from their land. The plant should not be bought, sold, grown, carried or released into the environment.
Karoo thorn <i>Vachellia karroo</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Kidney-leaf mud plantain <i>Heteranthera reniformis</i>	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Kochia <i>Bassia scoparia</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries Excluding the subspecies <i>trichophylla</i>
Koster's curse <i>Clidemia hirta</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Lagarosiphon <i>Lagarosiphon major</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Lantana <i>Lantana camara</i>	Prohibition on dealings Must not be imported into the State or sold
Long-leaf willow primrose <i>Ludwigia longifolia</i>	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Ludwigia <i>Ludwigia peruviana</i>	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Madeira vine <i>Anredera cordifolia</i>	Prohibition on dealings Must not be imported into the State or sold
Mesquite <i>Prosopis</i> species	Prohibition on dealings Must not be imported into the State or sold All species in the genus <i>Prosopis</i> have this requirement
Mesquite <i>Prosopis</i> species	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment.
Mexican feather grass <i>Nassella tenuissima</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or

	suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Miconia Miconia species	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries All species of Miconia are Prohibited Matter in NSW
Mikania vine Mikania micrantha	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries *all species in the genus Mikania are Prohibited Matter in NSW
Mimosa Mimosa pigra	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Mother-of-millions Bryophyllum species	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. Land managers should mitigate spread from their land. The plant should not be bought, sold, grown, carried or released into the environment.
Parkinsonia Parkinsonia aculeata	Prohibition on dealings Must not be imported into the State or sold
Parkinsonia Parkinsonia aculeata	Control Order Parkinsonia Control Zone: Whole of NSW Parkinsonia Control Zone (Whole of NSW): Owners and occupiers of land on which there is parkinsonia must notify the local control authority of new infestations; immediately destroy the plants; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of parkinsonia must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant.
Parthenium weed Parthenium hysterophorus	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Parthenium weed Parthenium hysterophorus	Prohibition on dealings The following equipment must not be imported into NSW from Queensland: grain harvesters (including the comb or front), comb trailers (including the comb or front), bins used for holding grain during harvest operations, augers or similar for moving grain, vehicles used to transport grain harvesters, support vehicles driven in paddocks during harvest operations, mineral exploration drilling rigs and vehicles used to transport those rigs, unless set out as an exception in Division 5, Part 2 of the Biosecurity Order (Permitted Activities) 2017
Pond apple Annona glabra	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Prickly acacia Vachellia nilotica	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited

	<i>matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i>
Prickly pears - Austrocyllindropuntias <i>Austrocyllindropuntia</i> species	Prohibition on dealings <i>Must not be imported into the State or sold</i> All species in the Austrocyllindropuntia genus have this requirement
Prickly pears - Cyllindropuntias <i>Cyllindropuntia</i> species	Prohibition on dealings <i>Must not be imported into the State or sold</i> All species in the Cyllindropuntia genus have this requirement
Prickly pears - Cyllindropuntias <i>Cyllindropuntia</i> species	Regional Recommended Measure <i>Land managers should mitigate the risk of new weeds being introduced to their land. Land managers should mitigate spread from their land.</i> This Regional Recommended Measure applies to all species of Cyllindropuntia except Cyllindropuntia rosea (Hudson pear)
Prickly pears - Opuntias <i>Opuntia</i> species	Prohibition on dealings <i>Must not be imported into the State or sold</i> Except for Opuntia ficus-indica (Indian fig)
Prickly pears - Opuntias <i>Opuntia</i> species	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. The plant should not be bought, sold, grown, carried or released into the environment. Land managers to reduce impacts from the plant on priority assets.</i> This Regional Recommended Measure applies to all species of Opuntia except for Opuntia ficus-indica (Indian fig)
Rope pear <i>Cyllindropuntia imbricata</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i> All species in the Cyllindropuntia genus have this requirement
Rope pear <i>Cyllindropuntia imbricata</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of new weeds being introduced to their land. Land managers should mitigate spread from their land. Land managers reduce impacts from the plant on priority assets.</i> This Regional Recommended Measure applies to all species of Cyllindropuntia except Cyllindropuntia rosea (Hudson pear)
Rubber vine <i>Cryptostegia grandiflora</i>	Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i>
Sagittaria <i>Sagittaria platyphylla</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Sagittaria <i>Sagittaria platyphylla</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.</i> This Regional Recommended Measure applies to all species of Sagittaria
Salvinia <i>Salvinia molesta</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Salvinia <i>Salvinia molesta</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be</i>

	<i>bought, sold, grown, carried or released into the environment. Notify local control authority if found.</i>
Scotch broom <i>Cytisus scoparius</i> subsp. <i>scoparius</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Serrated tussock <i>Nassella trichotoma</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Serrated tussock <i>Nassella trichotoma</i>	Regional Recommended Measure Exclusion zone: whole region except for the core infestation area that is bounded by the Central West Local Land Services boundary north along Burrendong Way to Stuart Town, east along Mookerawa Road to Burrendong Dam, and east along Oak Creek, bounded by the Central West Local Land Services boundary <i>Whole region: The plant should not be bought, sold, grown, carried or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should reduce impacts from the plant on priority assets. Land managers should mitigate the risk of the plant being introduced to their land.</i>
Siam weed <i>Chromolaena odorata</i>	Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i>
Silverleaf nightshade <i>Solanum elaeagnifolium</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Silverleaf nightshade <i>Solanum elaeagnifolium</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. The plant should not be bought, sold, grown, carried or released into the environment. Land managers to reduce impacts from the plant on priority assets.</i>
Smooth tree pear <i>Opuntia monacantha</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Smooth tree pear <i>Opuntia monacantha</i>	Regional Recommended Measure <i>Whole region: Land managers should mitigate the risk of new weeds being introduced to their land. Core infestations: Land managers should mitigate spread from their land.</i> *This Regional Recommended Measure applies to all species of Opuntia except for Opuntia ficus-indica (Indian fig)
Snakefeather <i>Asparagus scandens</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Spiny burrgrass - longispinus <i>Cenchrus longispinus</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of new weeds being introduced to their land. Land managers should mitigate spread from their land. The plant should not be bought, sold, grown, carried or released into the environment.</i>
Spiny burrgrass - spinifex <i>Cenchrus spinifex</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of new weeds being introduced to their land. Land managers should mitigate spread from their land. The plant should not be bought, sold, grown, carried or released into the environment.</i>
Spongeplant <i>Limnobium spongia</i>	Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i> All species of Limnobium are Prohibited Matter

Spotted knapweed <i>Centaurea stoebe</i> subsp. <i>micranthos</i>	Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i>
Tiger pear <i>Opuntia aurantiaca</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Tiger pear <i>Opuntia aurantiaca</i>	Regional Recommended Measure <i>Whole region: Land managers should mitigate the risk of new weeds being introduced to their land. Core infestations: Land managers should mitigate spread from their land.</i> *This Regional Recommended Measure applies to all species of <i>Opuntia</i> except for <i>Opuntia ficus-indica</i> (Indian fig)
Tropical soda apple <i>Solanum viarum</i>	Control Order <i>Tropical Soda Apple Control Zone: Whole of NSW</i> <i>Tropical Soda Apple Control Zone (Whole of NSW): Owners and occupiers of land on which there is tropical soda apple must notify the local control authority of new infestations; destroy the plants including the fruit; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of tropical soda apple must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant on the land, or on or in a carrier.</i>
Velvety tree pear <i>Opuntia tomentosa</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Velvety tree pear <i>Opuntia tomentosa</i>	Regional Recommended Measure <i>Whole region: Land managers should mitigate the risk of new weeds being introduced to their land. Core infestations: Land managers should mitigate spread from their land.</i> This Regional Recommended Measure applies to all species of <i>Opuntia</i> except for <i>Opuntia ficus-indica</i> (Indian fig)
Water caltrop <i>Trapa</i> species	Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i> All species in the <i>Trapa</i> genus are Prohibited Matter in NSW
Water hyacinth <i>Eichhornia crassipes</i>	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Water hyacinth <i>Eichhornia crassipes</i>	Biosecurity Zone <i>The Water Hyacinth Biosecurity Zone applies to all land within the State, except for the following regions: Greater Sydney or North Coast, North West (but only the local government area of Moree Plains), Hunter (but only in the local government areas of City of Cessnock, City of Lake Macquarie, MidCoast, City of Maitland, City of Newcastle or Port Stephens), South East (but only in the local government areas of Eurobodalla, Kiama, City of Shellharbour, City of Shoalhaven or City of Wollongong).</i> <i>Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone</i>
Water lilies <i>Nymphaea</i> species	Regional Recommended Measure <i>Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be</i>

	<i>bought, sold, grown, carried or released into the environment. Notify local control authority if found.</i> This Regional Recommended Measure applies to <i>Nymphaea mexicana</i> (Mexican water lily)
Water soldier <i>Stratiotes aloides</i>	Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i>
Willows <i>Salix</i> species	Prohibition on dealings <i>Must not be imported into the State or sold</i> All species in the <i>Salix</i> genus have this requirement, except <i>Salix babylonica</i> (weeping willows), <i>Salix x calodendron</i> (pussy willow) and <i>Salix x reichardtii</i> (sterile pussy willow)
Witchweeds <i>Striga</i> species	Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i> All species in the <i>Striga</i> genus are Prohibited Matter in NSW, except the native <i>Striga parviflora</i>
Yellow burrhead <i>Limnocharis flava</i>	Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i>

The content provided here is for information purposes only and is taken from the Biosecurity Act 2015 and its subordinate legislation, and the Regional Strategic Weed Management Plans (published by each Local Land Services region in NSW). It describes the state and regional priorities for weeds in New South Wales, Australia.

Appendix C: BioNet Atlas search results

Data from the BioNet Atlas website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°C; ^^ rounded to 0.01°C. Copyright the State of NSW through the Department of Planning, Industry and Environment. Search criteria : Public Report of all Valid Records of Threatened (listed on BC Act 2016) ,Commonwealth listed ,CAMBA listed ,JAMBA listed or ROKAMBA listed Entities in selected area [North: -32.22 West: 148.53 East: 148.63 South: -32.32] returned a total of 130 records of 37 species.

Report generated on 25/06/2021 11:43 AM

Class	Scientific Name	Common Name	NSW status	Comm. status	Records
Aves	<i>Anseranas semipalmata</i>	Magpie Goose	V,P		2
Aves	<i>Phaethon rubricauda</i>	Red-tailed Tropicbird	V,P	C,J	1
Aves	<i>Circus assimilis</i>	Spotted Harrier	V,P		4
Aves	<i>Hieraaetus morphnoides</i>	Little Eagle	V,P		8
Aves	<i>Falco subniger</i>	Black Falcon	V,P		4
Aves	<i>Rostratula australis</i>	Australian Painted Snipe	E1,P	E	2
Aves	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	P	C,J,K	1
Aves	<i>Philomachus pugnax</i>	Ruff	P	C,J,K	1
Aves	<i>Tringa stagnatilis</i>	Marsh Sandpiper	P	C,J,K	1
Aves	<i>^Calyptorhynchus lathami</i>	Glossy Black-Cockatoo	V,P,2		3
Aves	<i>Glossopsitta pusilla</i>	Little Lorikeet	V,P		2
Aves	<i>^^Lathamus discolor</i>	Swift Parrot	E1,P,3	CE	1
Aves	<i>^^Polytelis swainsonii</i>	Superb Parrot	V,P,3	V	4
Aves	<i>^^Ninox connivens</i>	Barking Owl	V,P,3		5
Aves	<i>^^Ninox strenua</i>	Powerful Owl	V,P,3		1
Aves	<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	V,P		4
Aves	<i>Chthonicola sagittata</i>	Speckled Warbler	V,P		3
Aves	<i>Anthochaera phrygia</i>	Regent Honeyeater	E4A,P	CE	13
Aves	<i>Epthianura albifrons</i>	White-fronted Chat	V,P		1
Aves	<i>Melithreptus gularis gularis</i>	Black-chinned Honeyeater (eastern subspecies)	V,P		1
Aves	<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler (eastern subspecies)	V,P		21
Aves	<i>Daphoenositta chrysoptera</i>	Varied Sittella	V,P		1
Aves	<i>Melanodryas cucullata cucullata</i>	Hooded Robin (south-eastern form)	V,P		1
Aves	<i>Petroica phoenicea</i>	Flame Robin	V,P		2
Aves	<i>Stagonopleura guttata</i>	Diamond Firetail	V,P		2
Mammalia	<i>Phascolarctos cinereus</i>	Koala	V,P	V	2
Mammalia	<i>Petaurus norfolcensis</i>	Squirrel Glider	V,P		1
Mammalia	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V,P	V	8

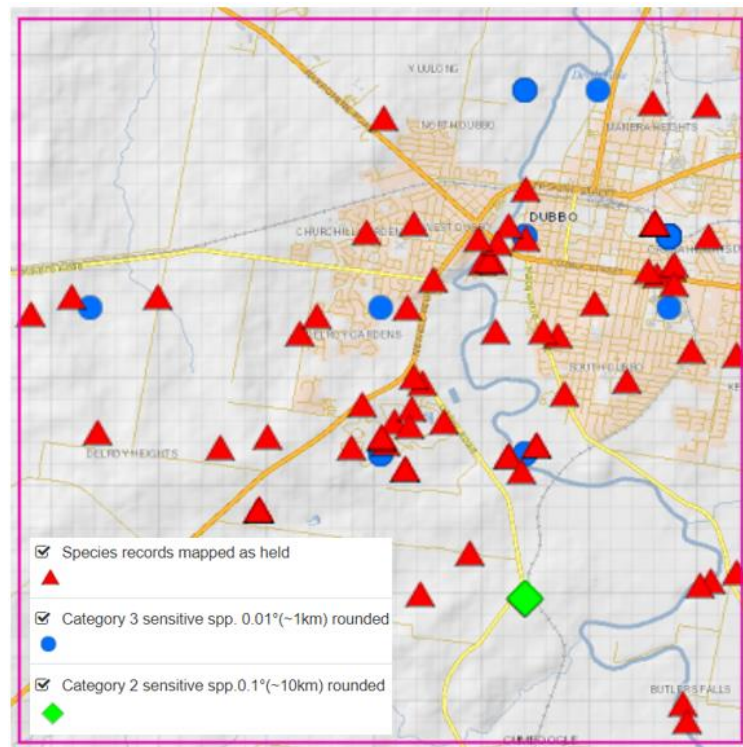
Mammalia	<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	V,P		4
Mammalia	<i>Chalinolobus picatus</i>	Little Pied Bat	V,P		3
Mammalia	<i>Nyctophilus corbeni</i>	Corben's Long-eared Bat	V,P	V	1
Mammalia	<i>Miniopterus orianae oceanensis</i>	Large Bent-winged Bat	V,P		4
Flora	<i>Calotis glandulosa</i>	Mauve Burr-daisy	V	V	2
Flora	<i>Indigofera efoliata</i>	Leafless Indigo	E1,3	E	9
Flora	<i>Commersonia procumbens</i>		V	V	3
Flora	<i>Homoranthus darwinoides</i>	Fairy Bells	V	V	1
Flora	<i>Diuris tricolor</i>	Pine Donkey Orchid	V,P,2		3

NSW status

1	Sensitivity Class 1 (Sensitive Species Data Policy)
2	Sensitivity Class 2 (Sensitive Species Data Policy)
3	Sensitivity Class 3 (Sensitive Species Data Policy)
CC	Collapsed Ecological Community (Biodiversity Conservation Act 2016)
CH	Critical Habitat (Biodiversity Conservation Act 2016)
E1	Endangered (Biodiversity Conservation Act 2016)
E2	Endangered Population (Biodiversity Conservation Act 2016)
E3	Endangered Ecological Community (Biodiversity Conservation Act 2016)
E4	Presumed Extinct (Biodiversity Conservation Act 2016)
E4A	Critically Endangered (Biodiversity Conservation Act 2016)
E4B	Critically Endangered Ecological Community (Biodiversity Conservation Act 2016)
EW	Extinct in the Wild (Biodiversity Conservation Act 2016)
FCE	Critically Endangered Fish (Fisheries Management Act 1994)
FE	Endangered Fish (Fisheries Management Act 1994)
FEC	Endangered Ecological Community of Fish (Fisheries Management Act 1994)
FEP	Endangered Population of Fish (Fisheries Management Act 1994)
FKTP	Key Threatening Process of Fish (Fisheries Management Act 1994)
FP	Protected Fish (Fisheries Management Act 1994)
FV	Vulnerable Fish (Fisheries Management Act 1994)
FX	Extinct Fish (Fisheries Management Act 1994)
KTP	Key Threatening Process (Biodiversity Conservation Act 2016)
P	Protected (National Parks & Wildlife Act 1974)
V	Vulnerable (Biodiversity Conservation Act 2016)
V2	Vulnerable Ecological Community (Biodiversity Conservation Act 2016)

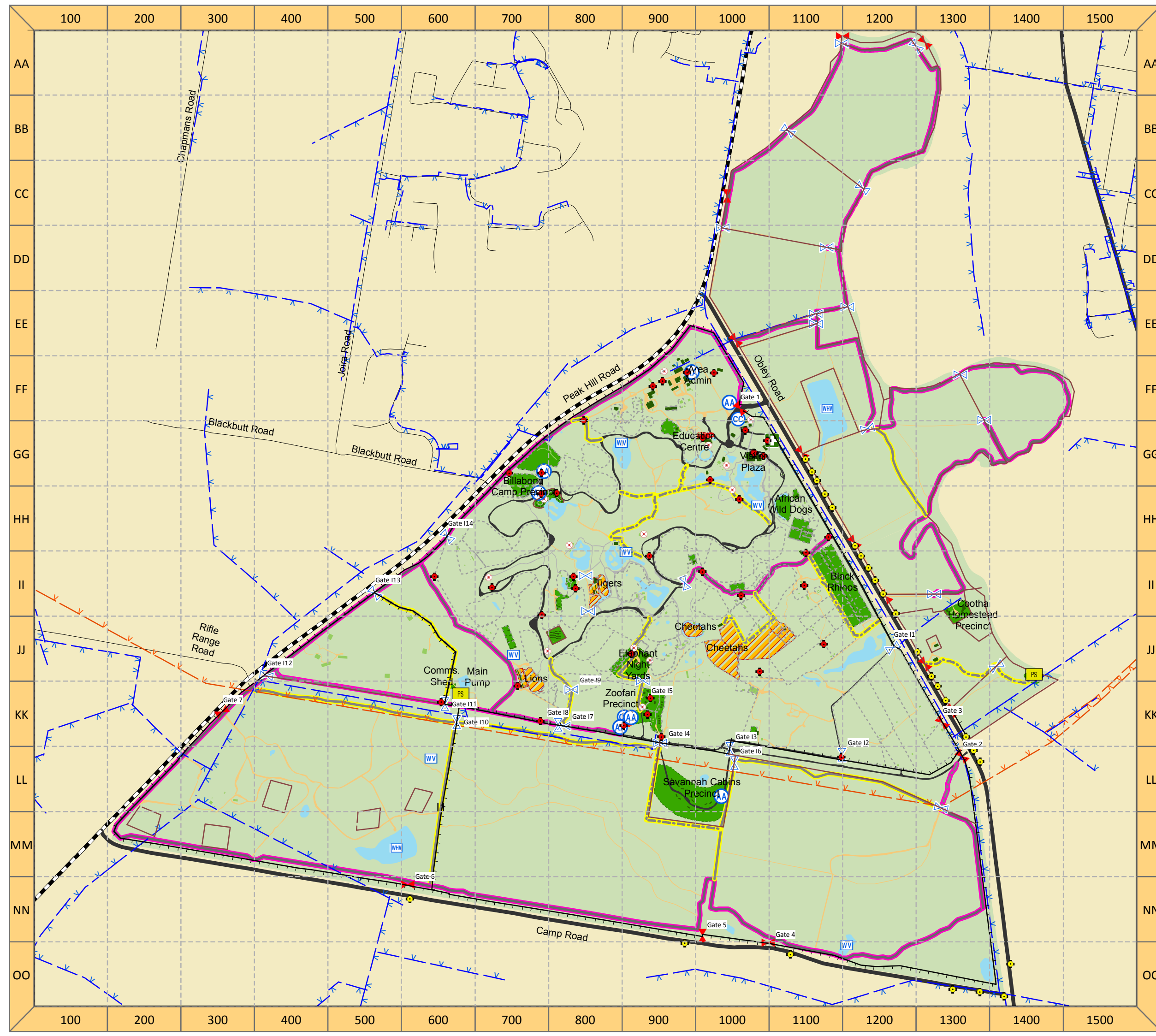
Commonwealth status

C	Listed on China Australia Migratory Bird Agreement
CD	Conservation Dependent (Commonwealth EPBC Act 1999)
CE	Critically Endangered (Commonwealth EPBC Act 1999)
E	Endangered (Commonwealth EPBC Act 1999)
J	Listed on Japan Australia Migratory Bird Agreement
K	Listed on Republic of Korea Australia Migratory Bird Agreement
KTP	Key Threatening Process (Commonwealth EPBC Act 1999)
V	Vulnerable (Commonwealth EPBC Act 1999)
X	Extinct (Commonwealth EPBC Act 1999)
XW	Extinct in the Wild (Commonwealth EPBC Act 1999)





Appendix C - Bushfire Management



TWPZ Emergency Management Map

	Hydrant - TWPZ		11kV
	Hydrant - Dubbo City		132kV
	Pump station		High Value Structures
	Security Fence		Structure,
	Enclosure Fence		High value location/enclosures
	Internal Fence		Big Cat enclosures
	External Gate		Cat 1, Essential
	Internal Gate		Cat 1, Important
	Assembly Area		Cat 7, Essential
	Command Centre		Cat 7, Important
	CFU Trailer		Public Access Road
	First Aid		Management Trail
	LPG		Pedestrian Trail
	Water Helicopters Vehicles		Primary Road
	Water Vehicles		Sub Arterial Road
			Local Road

Coordinate System: GDA 1994 MGA Zone 55
Projection: Transverse Mercator
Datum: GDA 1994
Units: Meter



NOTE: This drawing utilises Geographical Information Systems (GIS) data. The end user agrees that the product is and shall remain the property of the image provider. CJC Environmental endeavours to ensure that the information provided in this map is correct at the time of publication. CJC Environmental does not warrant, guarantee or make representations regarding the currency, correctness and accuracy of the information of this map.



Fire Response Procedures

Aim

The aim of these procedures is to establish guidelines for Zoo workers to follow in the event of a fire emergency and the subsequent actions to prevent such an incident.

Objective

The objective is to resolve the emergency and to do so without risk to workers, visitors, animals and/or property.

Definition of Fire Emergency

Fires can occur through accident, negligence, recklessness or deliberate act. The first few minutes after a fire starts are vital to gain control of it.

Natural disasters such as grass and bush fire pose significant threat to the organisation.

It should be noted that the use of TWPZ equipment and workers are limited primarily to a first response pending the arrival of the appropriate Fire Authorities (i.e. Fire Rescue NSW or NSW Rural Fire Service) who will assume control and co-ordinate fire suppression and hazard reduction activities.

Introduction

In the event of a fire emergency, the actions of workers must be directed towards dealing with the incident as quickly as possible without exposing workers or visitors to risk.

If the fire is considered significant and poses threat to human safety, it may become necessary to evacuate the site.

In any event, the immediate actions by on-scene workers should be to notify Base and keep members of the public well away pending the arrival of the Emergency Coordinator and fire response team who are responsible for coordinating the emergency response. In the event Base is not operating call 000.

The Manager, Facilities and Asset Operations or delegate is the designated Emergency Coordinator for fire emergencies. In the absence of this person the most 'Senior' Works and Trades worker will assume the role of Emergency Coordinator. On weekends and public holidays the most 'Senior' Life Science worker will assume the role of Emergency Coordinator.

In determining the appropriate actions to be taken on discovering a fire, the following points must be considered:

- The first few minutes after a fire starts are vital in controlling it. If there is a small fire that can easily be controlled, isolate the area and evacuate the facility whilst a capable worker/s begins extinguishing the fire. If the fire progresses the worker/s

People and Learning

Work, Health and Safety

Emergency Procedures

Fire Emergency Procedures TWPZ



must evacuate immediately;

- It is better for the Fire Brigade to arrive at a small fire under control than to arrive at a large fire out of control;
- A worker should be allocated to meet the Fire Brigade that can escort them right to the fire without delay;
- Once a flame reaches 1 metre high, any delay in evacuating the affected area could cost lives;
- Smoke and gases are dangerous even when flames and heat are some distance away.

Personal safety is most important. Workers are to initiate first response, only if safe to do so, using the first response equipment available e.g Fire Extinguisher or Fire hose.

Discrete Codes

A Fire emergency code will be confirmed by the Emergency Coordinator or delegate at the time of emergency or as soon as practical.

Code Red	Fire / *Smoke – confirmation of smoke on zoo grounds
-----------------	--

* Should a worker smell smoke, they should contact Base who will liaise with the ECO.

Immediate action by worker(s) identifying emergency situation - during normal operating hours (8:00am – 5:00pm)

1. Ensure own safety in the first instance, then by using the two-way radio inform Base of the nature of the emergency and any steps so far taken;

When contacting Base worker should state clearly:

- **Urgent Urgent Urgent ...**
 - Identity and location
 - Nature of emergency (ideally, what is the fuel source, what is under threat person/animal etc.)
 - Any injuries/nature of assistance required
2. If safe to do so, activate immediate response with fire response equipment and take action to protect self and others from danger. AND
 3. wait for further instruction and/or arrival of the Emergency Coordinator or delegate.

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Emergency Procedures

Fire Emergency Procedures TWPZ



Upon arrival of the Emergency Coordinator

The Emergency Coordinator will assume responsibility for the emergency and confirm the emergency Code in consultation with the lead fire response worker. The expertise of the appropriate first response workers will be sought in this type of emergency. No member of the fire team shall attend at or near the scene of the emergency without the appropriate PPE.

Public Address Announcements

Where appropriate the Emergency Coordinator will make a recommendation to the Chief Warden that an evacuation announcement is made via the Savannah Visitor Plaza and portable PA Systems asking the public to leave the Zoo or proceed to assembly points.

Involvement of Workers in Response

Only Taronga Fire Team workers are permitted to respond in emergency situations unless expressly authorised by the Emergency Coordinator. Any worker who attempts to extinguish a fire outside of their capability or training without authorisation risks injury to themselves, other workers and visitors.

Immediate action by worker(s) identifying emergency situation - no Base in operation outside normal operating hours (before 8:00am – after 5:00pm)

Note: Separate procedures exist for Night Emergencies during extended hours trading periods.

All workers working in the grounds at night must carry a two way radio.

In the event a worker discovers a fire they should immediately contact 000 and Security as per the Emergency contact list. Assist in directing the public to safety. The most 'Senior' worker at the scene is to take control of the immediate situation until the arrival of the Emergency Coordinator and/or Emergency Services.

Upon arrival of the Emergency Coordinator and/or Emergency Services they will assume responsibility for the emergency. It is pertinent to follow their instructions.

Transport

Internal roads are to be kept free of vehicles not involved in the emergency.

Termination of the Emergency

The decision to terminate the emergency will be made by the Emergency Coordinator in consultation with the lead fire response worker and/or Emergency Services. The Chief Warden will declare the emergency over once consultation has taken place and make decisions in relation to further monitoring and allocating of resources appropriately.

Appendix D - Aboriginal Cultural Heritage Due Diligence Assessment



View along existing track at the study area.

ABORIGINAL DUE DILIGENCE ASSESSMENT REPORT

PLATYPUS CONSERVATION CENTRE

TARONGA WESTERN PLAINS ZOO, DUBBO

JUNE 2021

Report prepared by
OzArk Environment & Heritage
for Taronga Conservation Society Australia



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Acknowledgement

OzArk acknowledge Traditional Owners of the area on which this assessment took place and pay respect to their beliefs, cultural heritage and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

EXECUTIVE SUMMARY

OzArk Environment & Heritage (OzArk) has been engaged by NSW Public Works Advisory (the client), on behalf of Taronga Conservation Society Australia (TCSA; the proponent) to complete an Aboriginal due diligence heritage assessment for the proposed Platypus Conservation Centre (PCC; the proposal).

The PCC at Taronga Western Plains Zoo (TWPZ) will require the clearing of regrowth white cypress in the direct construction footprint, access tracks and a surrounding building buffer zone. It will also require earthworks to prepare the site for building pads. The electrical service route will include the creation of an easement for overhead and underground power lines.

The visual inspection of the study area was undertaken by OzArk Senior Archaeologist, Dr Alyce Cameron, on 19 May 2021. The inspection included members of the local Aboriginal community organised by TWPZ. No Aboriginal objects or landforms with high potential to contain subsurface deposits were identified.

The undertaking of the due diligence process resulted in the conclusion that the proposed works will have an impact on the ground surface, however, no Aboriginal objects or intact archaeological deposits will be harmed by the proposal. This moves the proposal to the following outcome:

Aboriginal Heritage Impact Permit (AHIP) application not necessary. Proceed with caution. If any Aboriginal objects are found, stop work, and notify Heritage NSW (02 9873 8500 or heritagemailbox@environment.nsw.gov.au). If human remains are found, stop work, secure the site, and notify NSW Police and Heritage NSW.

To ensure the greatest possible protection to the area's Aboriginal cultural heritage values, the following recommendations are made:

- 1) All land and ground disturbance activities must be confined to within the study area, as this will eliminate the risk of harm to Aboriginal objects in areas not assessed. Should the parameters of the proposal extend beyond the assessed areas, then further archaeological assessment may be required.
- 2) All staff and contractors involved in the proposed work should be made aware of the legislative protection requirements for all Aboriginal sites and objects.
- 3) This assessment has concluded that there is a low likelihood that the proposed work will adversely harm Aboriginal cultural heritage items or sites. However, during works, if Aboriginal artefacts or skeletal material are noted, all work should cease and the procedures in the *Unanticipated Finds Protocol* (**Appendix 2**) should be followed.
- 4) Inductions for work crews should include a cultural heritage awareness procedure to ensure they recognise Aboriginal artefacts (see **Appendix 3**) and are aware of the

legislative protection of Aboriginal objects under the *National Parks and Wildlife Act 1974* and the contents of the *Unanticipated Finds Protocol*.

- 5) The information presented here meets the requirements of the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*. It should be retained as shelf documentation for five years as it may be used to support a defence against prosecution in the event of unanticipated harm to Aboriginal objects.

CONTENTS

EXECUTIVE SUMMARY	III
1 INTRODUCTION	1
1.1 Brief description of the proposal	1
1.2 Study area and proposed works	1
1.3 Assessment approach	2
2 ABORIGINAL DUE DILIGENCE ASSESSMENT	3
2.1 Introduction	3
2.2 Defences under the NPW Regulation 2009	3
2.2.1 Low impact activities	3
2.2.2 Disturbed lands	3
2.3 Application of the Due Diligence Code of Practice to the proposal	4
2.3.1 Step 1	4
2.3.2 Step 2a	4
2.3.3 Step 2b	6
2.3.4 Step 2c	10
2.3.5 Step 3	11
2.3.6 Step 4	12
2.4 Conclusion	13
3 MANAGEMENT RECOMMENDATIONS	14
REFERENCES	15
PLATES	17
APPENDIX 1: AHIMS SEARCH RESULTS	18
APPENDIX 2: ABORIGINAL HERITAGE: UNANTICIPATED FINDS PROTOCOL	23
APPENDIX 3: ABORIGINAL HERITAGE: ARTEFACT IDENTIFICATION	24

FIGURES

Figure 1-1. Map showing the location of the proposal.....	1
Figure 1-2: Aerial showing the study area.	2
Figure 2-1: Previously recorded sites in relation to the study area.	5
Figure 2-2: Historic aerial image of TWPZ site with the approximate study area overlaid in red.	11
Figure 2-3: Survey coverage within the study area.	12

TABLES

Table 2-1: Determination of whether Due Diligence Code applies.	4
Table 2-2: Site types and frequencies of AHIMS sites near the study area.	5
Table 2-3: Due Diligence Code application.....	13

PLATES

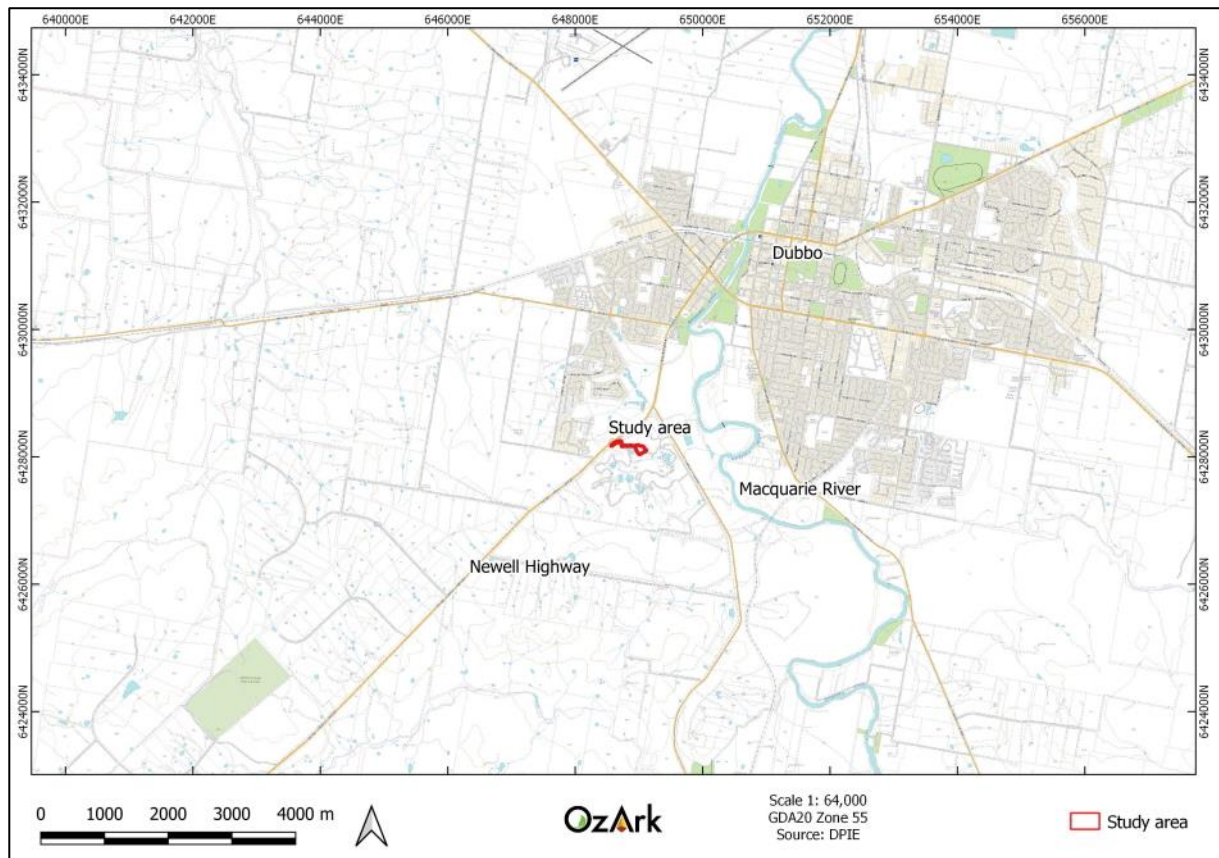
Plate 1: View of the study area showing typical regrowth vegetation and ground cover.....	17
Plate 2: View north along an existing track within study area.	17

1 INTRODUCTION

1.1 BRIEF DESCRIPTION OF THE PROPOSAL

OzArk Environment & Heritage (OzArk) has been engaged by NSW Public Works Advisory (the client), on behalf of Taronga Conservation Society Australia (the proponent) to complete an Aboriginal due diligence heritage assessment for the proposed Platypus Conservation Centre (PCC; the proposal). The proposal is in the Dubbo Local Government Area (LGA) (**Figure 1-1**).

Figure 1-1. Map showing the location of the proposal.



1.2 STUDY AREA AND PROPOSED WORKS

The PCC at Taronga Western Plains Zoo (TWPZ) will require the clearing of regrowth white cypress forest in the direct construction footprint, access tracks, and a surrounding asset protection zone. It will also require earthworks to prepare the site for building pads. The electrical service route will include the creation of an easement for overhead and underground power lines.

The study area comprises of bushland, roads, and landscaped areas of TWPZ site, shown on **Figure 1-2**. The study area is one kilometre (km) east of the Macquarie River.

1.3 ASSESSMENT APPROACH

Aboriginal cultural heritage

The desktop and visual inspection component for the study area follows the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (due diligence; DECCW 2010). The field inspection followed the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales* (OEH 2011).

Figure 1-2: Aerial showing the study area.



2 ABORIGINAL DUE DILIGENCE ASSESSMENT

2.1 INTRODUCTION

Section 57 of the *National Parks and Wildlife Regulation 2019* (NPW Regulation) made under the *National Parks and Wildlife Act 1974* (NPW Act) advocates a due diligence process to determining likely impacts on Aboriginal objects. Carrying out due diligence provides a defence to the offence of harming Aboriginal objects and is an important step in satisfying Aboriginal heritage obligations in NSW.

2.2 DEFENCES UNDER THE NPW REGULATION 2009

2.2.1 Low impact activities

The first step before application of the due diligence process itself is to determine whether the proposed activity is a “low impact activity” for which there is a defence in the NPW Regulation. The exemptions are listed in Section 58 of the NPW Regulation (DECCW 2010: 6).

The proposal includes works that are not considered to be ‘low impact activity’, such as clearing and earthworks. Therefore, the due diligence process must be applied.

2.2.2 Disturbed lands

Relevant to this process is the assessed levels of previous land-use disturbance.

The NPW Regulation Section 58 (DECCW 2010: 18) define disturbed land as follows:

Land is disturbed if it has been the subject of a human activity that has changed the land’s surface, being changes that remain clear and observable.

Examples include ploughing, construction of rural infrastructure (such as dams and fences), construction of roads, trails and tracks (including fire trails and tracks and walking tracks), clearing vegetation, construction of buildings and the erection of other structures, construction or installation of utilities and other similar services (such as above or below ground electrical infrastructure, water or sewerage pipelines, stormwater drainage and other similar infrastructure) and construction of earthworks.

Parts of the study area include existing roads and landscaped areas that would be considered disturbed land under the legislation. However, the proponent has elected to apply the precautionary principle and proceed with a visual inspection of the study area.

In summary, it is determined that the proposal must be assessed under the Due Diligence Code. The reasoning for this determination is set out in **Table 2-1**.

Table 2-1: Determination of whether Due Diligence Code applies.

Item	Reasoning	Answer
Is the activity a Part 3A project declared under section 75B of the EP&A Act?	It is understood that the proposal is assessed under Part 5 of the EP&A Act, but also considered by Dubbo Regional Council as part of a Part 4 Development Application submission.	No
Is the activity exempt from the NPW Act or NPW Regulation?	The proposal is not exempt under this Act or Regulation.	No
Do either or both of these apply: Is the activity in an Aboriginal place? Have previous investigations that meet the requirements of this Code identified Aboriginal objects?	The activity will not occur in an Aboriginal place. Previous investigations have been conducted over a small part of the study area, but not enough to preclude the need for a comprehensive assessment (see Section 2.3.2 below) .	No
Is the activity a low impact one for which there is a defence in the NPW Regulation?	The proposal is not a low impact activity for which there is a defence in the NPW Regulation.	No
Is the activity occurring entirely within areas that are assessed as 'disturbed lands'?	The proposal is not exclusively within areas of high modification.	No
Due Diligence Code of Practice assessment is required		

2.3 APPLICATION OF THE DUE DILIGENCE CODE OF PRACTICE TO THE PROPOSAL

To follow the generic due diligence process, a series of steps in a question/answer flowchart format (DECCW 2010: 10) are applied to the proposed impacts and the study area, and the responses documented.

2.3.1 Step 1

Will the activity disturb the ground surface or any culturally modified trees?

Yes, the proposal will impact the ground surface and may impact culturally modified trees.

The proposal will impact the ground surface through earthworks, trenching for electrical connections, and construction. The proposal will also require clearing of trees within the study area. If there are any culturally modified trees within the study area, they may be impacted by this activity.

2.3.2 Step 2a

Are there any relevant confirmed site records or other associated landscape feature information on AHIMS?

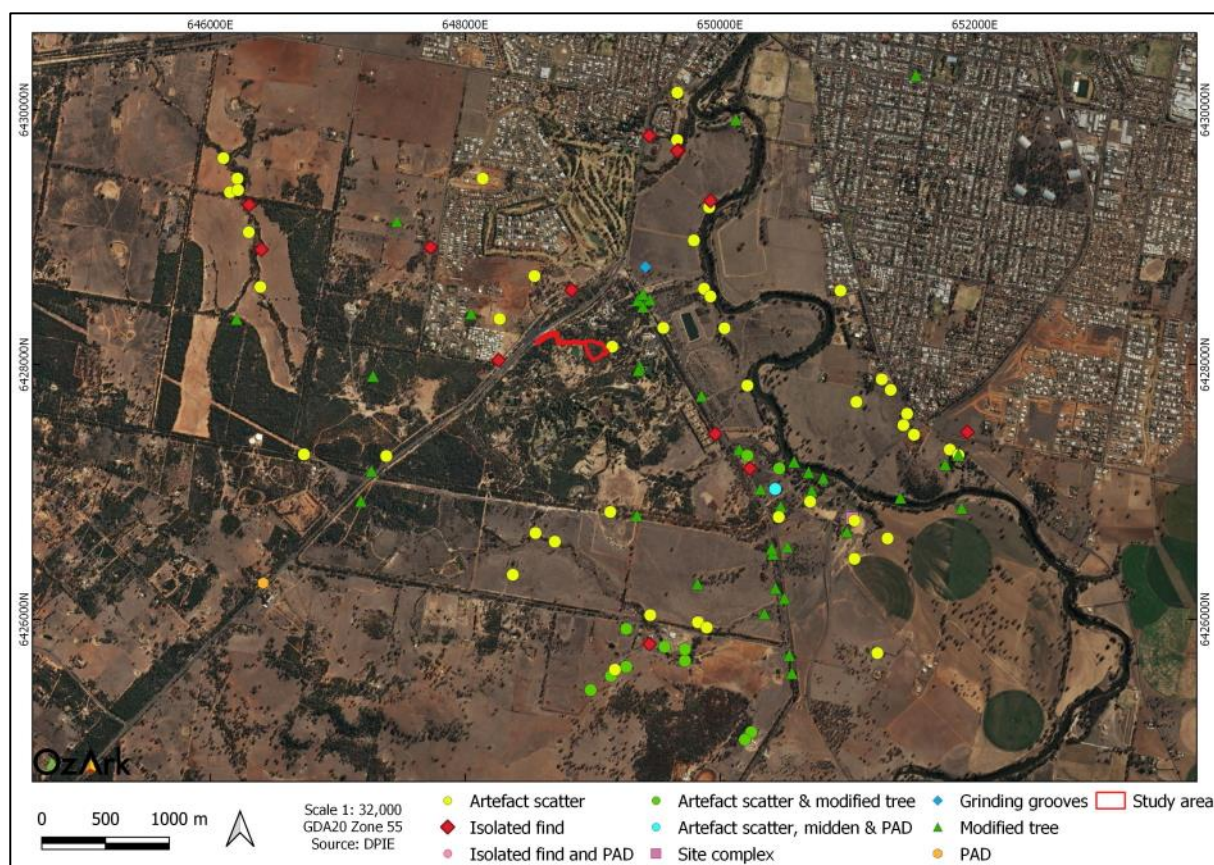
No, there are no previously recorded sites within the study area.

A 3 km by 3 km search of the Aboriginal Heritage Information Management System (AHIMS) centred on the study area returned 115 results for Aboriginal heritage items.

Figure 2-1 shows all previously recorded sites in relation to the study area, and **Table 2-2** shows the types of sites that are close to the study area.

Table 2-2: Site types and frequencies of AHIMS sites near the study area.

Site Type	Number	% Frequency
Artefact scatter	46	40
Modified tree	39	34
Isolated find	14	12
Artefact scatter & modified tree	11	10
Artefact scatter, midden & PAD	1	1
Ceremony and dreaming, ceremonial ring, hearth, artefact scatter & grinding grooves	1	1
Grinding grooves	1	1
Isolated find & PAD	1	1
PAD	1	1
Total	115	100

Figure 2-1: Previously recorded sites in relation to the study area.

There are no AHIMS results within the study area. The closest site to the study area, 50 metres (m) to the east, is an isolated find identified during assessment for the Animal Hospital development at TWPZ. The next closest sites are both modified trees, between 200–250 m southeast of the study area.

The most frequent site types in the study area are artefact scatters (40%) and modified trees (34%). If vegetation of suitable maturity and type for cultural modification is present within the

study area, then modified trees and artefact scatters are expected to be the most likely site types identified.

2.3.3 Step 2b

Are there any other sources of information of which a person is already aware?

No, there are no other sources of information that would indicate the presence of Aboriginal objects in the study area.

Ethnographic sources of information

According to Tindale's (1974) map of tribal boundaries the Dubbo area falls within the northern limits of area associated with the Wiradjuri language group. Wiradjuri country is bound by Wongaibon country to the west and Wailwan country to the north.

The Tubba-Gah and Dundullimal comprise two local sub-groups, 'clans' or mobs within the larger Wiradjuri entity. The territory of the Tubba-Gah is thought to lie to the east of the Macquarie River, south of the Talbragar River and north of Eulomogo creek, whereas the Dundullimal are thought to have occupied the area to the west of the Macquarie River, including the locality encompassing the study area (Koettig 1985: 21-22). Not all Aboriginal community representatives agree with this division, with some arguing that the Tubba-Gah mob inhabited both sides of the Macquarie River.

Records of early colonial interaction with the first inhabitants of the Dubbo area by explorers and surveyors such as Oxley (1820) and Sturt (1833) suggest that the area had a relatively high-density population. Oxley noted that the country '*afforded them ample means of subsistence*' when compared to the harsher conditions further south (Oxley 1820: 171–2).

Edward Garnsey, a resident of Dubbo of the late 19th and the early 20th century, recorded some ethnographic information from his interactions with Aboriginal groups of the area. He recorded that waterways, including the Wingewarra Swamp and Eulomogo Creek, not just the Macquarie River, were a focus of local Aboriginal hunting and food supply, such as: cod, perch, yabbies, waterbirds and turtles (Garnsey 1942: 5). More recent documentary evidence of the post-contact Aboriginal population tends to focus on the camps and missions to the north of Dubbo at Devil's Hole and Talbragar Mission (Kabaila 1998: 50–2).

Archaeological context

Prior to 1985, no systematic archaeological studies had been undertaken in the Dubbo region. During the late nineteenth and early twentieth centuries, interested locals and amateurs, including Milne, Gresser and to a lesser extent Garnsey, recorded a number of sites and collected artefacts, contributing to the body of archaeological data available to researchers today.

A range of archaeological studies have since been undertaken including the Dubbo region since (Koettig 1985; OzArk 2006, OzArk 2014, OzArk 2016). These provide baseline data for placing past Aboriginal sites within a regional landscape context.

Koettig 1985

In 1985, the survey by Koettig (1985) investigated the evidence of Aboriginal occupation within 5 km of Dubbo's city limits, including the current study area. The investigation concluded that sites exist throughout all environmental landscapes surveyed. Artefact scatters, scarred trees and grinding grooves were the most frequently occurring site types; and site location and size were determined by various environmental and social factors. Of the environmental factors, proximity to water, geological formation and availability of food resources were the most important. As such, Koettig's site prediction model suggested that: all site types would occur along watercourses; stone arrangements would occur most frequently on knolls or prominent landscape features; larger campsites would occur most frequently along permanent watercourses, near springs or wetlands; small campsites could occur anywhere; scarred trees could occur anywhere, but particularly in remnant native woodland communities; campsites would be smaller and more sporadic near the headwaters of creeks; grinding grooves could occur where appropriate sandstone existed; quarries could occur wherever there were suitable stone sources; and shell middens could occur only along the Macquarie River.

OzArk 2006 and 2014

An assessment of Aboriginal heritage resources within the then Dubbo LGA to assist Dubbo City Council (now Dubbo Regional Council) with planning was commenced by OzArk (2006). This study aimed to consolidate previous surveys and assessments of Aboriginal heritage, set a baseline for further study, and survey areas zoned for future expansion.

Approximately 1,120 hectares (ha) of land was surveyed within five study areas surrounding the city of Dubbo. During the survey, 26 new Aboriginal sites were recorded, and eight out of 12 previously recorded sites were located. A number of the newly recorded site types were similar to those recorded in previous studies. Fewer scarred trees were recorded than expected, likely due to intensive agricultural practices and associated tree clearance around Dubbo compared to the broader (former) Dubbo LGA. No new grinding groove sites were recorded which conformed to predictive modelling, given that this site type comprised only 3.6% of previously located sites within the former Dubbo LGA. Scarred tree distribution adhered to expectations, exclusively following waterways and fence-lines, although this likely reflects land clearing practices rather than actual Aboriginal site patterning. Isolated finds and open sites followed a similar pattern as they were largely limited to watercourse edges and elevated terraces within 500 m of the Macquarie River and other permanent to semi-permanent waterways. No significant patterning

emerged in terms of site size or quality, perhaps because surface manifestations often do not adequately reflect site size or complexity.

OzArk (2014) expanded this analysis to include comparison of Strahler stream order (an indication of waterway size and reliability) with site location. This analysis concluded that:

- All sites occurred within 500 m of streams (of any kind)
- Most sites cluster within 100 m of a stream and become very infrequent further than 200 m from a stream.

OzArk 2016

Following on from the observations of OzArk (2014), OzArk (2016) undertook an assessment of Travelling Stock Reserves (TSRs) in the Central West Local Land Services (CWLLS) area.

The CWLLS was divided into two stream orders: major waterways (normally named rivers) and minor waterways (normally named creeks and their larger tributaries). Based on the evidence of site location obtained by OzArk (2014), two buffers were established for each waterway type, namely:

- 200 m either side of a major waterway (Drainage 1)
- 100 m either side of a minor waterway (Drainage 2).

While the OzArk (2014) study focused on a higher resolution of landform type (i.e. distinguishing between lower and upper terraces), this was not possible for the CWLLS area that covered such an extensive region. Instead, Mitchell landscapes were used to understand the underlying landform type of an area which is often obscured by local variations in topography.

When previously recorded sites were plotted against these landscape types, the following observations were made:

- A high number of sites (n=876) have been recorded in slope landscapes. This is perhaps biased by the fact that Dubbo is located within this landscape type and the highest number of sites in the CWLLS area have been recorded in and around Dubbo
- The highest concentration of sites is within channel and floodplain landscapes (n=927)
- Alluvial plains landscapes have the third highest concentration of sites (n=770)
- Relatively small numbers of sites are recorded in uplands (n=5) or plateau landscapes (n=34)
- A reasonable number of sites have been recorded in downs landscapes (n=255). These recordings are largely due to three or four clusters of sites that may have skewed the data slightly. If the veracity of all site recordings in this category was able to be verified, it is suspected that the actual number of sites in downs landscapes would be lower.

The result of mapping AHIMS sites against landform type indicated that sites should be most frequently recorded in channels and floodplain landscapes, alluvial plains landscapes, and downs landscapes. Sites were more likely to be in areas of lower elevation (plains/channels/downs) and in areas of more moderate gradient (slopes).

Elements of the predictive model were then tested through targeted survey. 59 sites were recorded during the survey. 26 (44%) of the recorded sites were scarred trees, 22 (37%) were artefact scatters, and 11 (19%) were isolated finds.

Combining the results of the predictive model and the survey it was demonstrated that:

- Most sites will be recorded within channels and floodplains, and slopes landscapes
- Sites in channels and floodplains landscapes are more likely to be scarred trees, while those in slopes landscapes are likely to be artefact scatters.

Previous surveys at TWPZ

Several archaeological surveys have been undertaken at the TWPZ property, including the most wide reaching TWPZ assessment undertaken in 2002 (OzArk 2002). The survey effort of this assessment recorded twelve Aboriginal sites, which, when added to the sixteen¹ previously recorded sites on TWPZ managed land, results in a total of 33 Aboriginal sites currently recorded as extant on the grounds of TWPZ. These are predominantly open camp sites (14) and scarred trees (15), with two isolated finds (2), one midden, and one site complex including grinding grooves, artefacts and other cultural evidence. For further discussion on these sites please refer to the overarching TWPZ Indigenous heritage report, OzArk 2002.

More recent surveys at TWPZ have covered relatively small study areas and resulted in few Aboriginal site recordings. Further survey in 2008 for the entry modification at TWPZ (OzArk 2008) recorded two more scarred trees, and OzArk (2019) confirmed the location of the isolated find near the current study area (AHIMS ID 36-1-0757). OzArk (2020) investigated two previously recorded sites (AHIMS IDs 36-1-0103 and 36-1-0104) and conducted a test excavation program that determined that the sub-surface deposits at the site had a low density of artefacts.

Implications for the study area

Previous large-scale modelling studies have shown that site distribution in the Dubbo region conforms to some descriptive patterns, but that the most frequent types (isolated finds, artefact scatters and scarred trees) can occur in any identified landform.

Most Aboriginal sites, in particular artefact sites, occur within 100 m of a stream (of any size). However, this increased frequency of sites does not necessarily mean the sites are more complex

¹ There are in fact seventeen, however, one of these is a re-recording of a previously registered site and has thus been omitted from the reckoning.

or have a greater density of artefacts or features. Some site types, such as modified trees, that tend to be in close proximity to waterways in other assessed regions, have a less discernible pattern in the Dubbo locale due to clearing practices.

The study area is within the Goonoo Slopes landscape unit (see **Section 2.3.4**). The regional study of the CWLLS area (OzArk 2016) indicates that sites are possible in this landscape unit, and if present, are likely to be artefact sites. However, as the study area is outside of the defined drainage buffers, the likelihood of site recordings is diminished.

Assessments conducted at TWPZ indicate that there is higher potential for Aboriginal sites on alluvial landforms associated with the Macquarie River. However, sites including modified trees and isolated finds have been recorded on slope landforms near the current study area.

2.3.4 Step 2c

Are there any landscape features that are likely to indicate presence of Aboriginal objects?

No, landforms with identified archaeological sensitivity are not present at the study area.

Landscape Context

The study area falls within the Brigalow Belt South Bioregion, within the Pilliga ecosystem, and is comprised wholly of the Goonoo Slopes landscape unit (Mitchell 2002: 10).

The topography of the Goonoo Slopes is characterised by extensive undulating to stepped low hills, long westerly slopes and poorly defined drainage networks (Mitchell 2002:10). General elevation across this landscape type ranges from 300 to 500 m, with a local relief of up to 30 m.

The study area is situated on a low grade slope from west to east.

There are no hydrological features in the study area but there are unnamed ephemeral drainage lines nearby, most of which have been dammed for agricultural or aesthetic purposes. The Macquarie River, a permanent water source for the region, is located approximately 1 km east of the study area.

Land use history

The TWPZ site was part of the large pastoral holding Dundullimal in the late nineteenth century, which would have involved clearing and grazing across the property. During the twentieth century, the site was used as a military base including disturbances including vegetation clearing, building construction, and explosive testing. An aerial image from 1986 shows that most of the TWPZ area had been cleared by that time and indicates that much of the current vegetation at the site is regrowth (**Figure 2-2**).

Figure 2-2: Historic aerial image of TWPZ site with the approximate study area overlaid in red.



Conclusion

The landscape features suggest that the study area has low archaeological sensitivity because it is distant from reliable water. Sites are most likely to be identified at the eastern sections of the study area lower on the slope landform and closer to the Macquarie River.

2.3.5 Step 3

Can harm to Aboriginal objects or disturbance of archaeologically sensitive landscape features be avoided?

Yes. There are no known Aboriginal objects within the study area and landforms with identified archaeological sensitivity will not be impacted.

There are no previously recorded Aboriginal objects within the study area and no landforms have identified archaeological sensitivity.

While not required by the Due Diligence Code, the proponent has elected to proceed to a visual inspection of the study area to ensure that Aboriginal objects will not be harmed.

2.3.6 Step 4

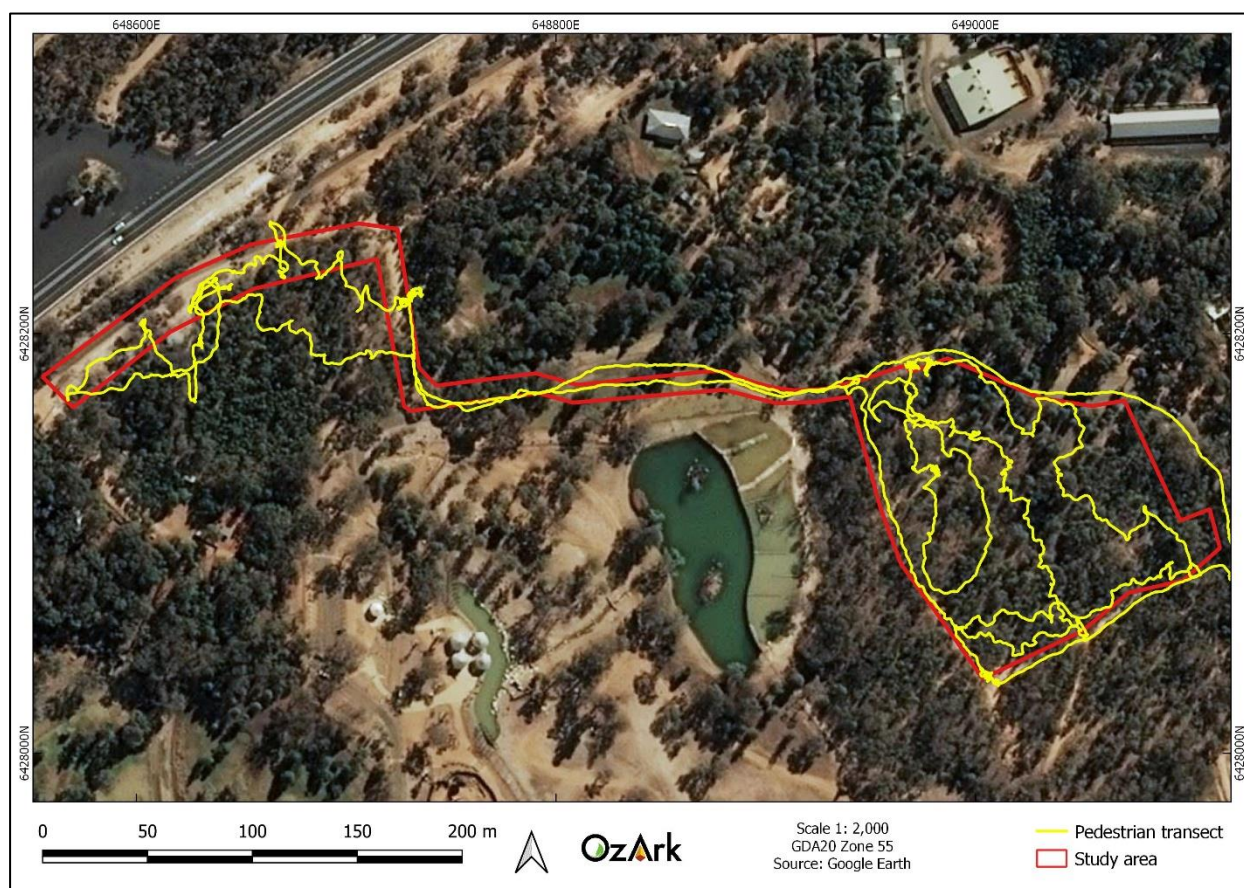
Does a desktop assessment and visual inspection confirm that there are Aboriginal objects or that they are likely?

The visual inspection did not identify Aboriginal objects at the study area.

The visual inspection of the study area was undertaken by OzArk Senior Archaeologist, Dr Alyce Cameron, on 19 May 2021. The inspection included members of the local Aboriginal community organised by TWPZ. There were no significant constraints to the efficacy of the inspection and all portions of the study area were inspected (**Figure 2-3**).

Ground surface visibility (GSV) was variable, ranging from very low in areas of dense regrowth (**Plate 1**) to high in isolated areas of disturbance, such as tracks (**Plate 2**).

Figure 2-3: Survey coverage within the study area.



Discussion

The absence of sites at the study area was one of the outcomes anticipated from the background modelling. The archaeological potential of the landforms is low due to the distance from water and the considerable ground disturbance from previous land use at the study area was also noted. These include clearing of most mature vegetation, resulting in a high proportion of

regrowth, and landscaping and construction works undertaken for TWPZ and possibly the location's previous use as an army base.

2.4 CONCLUSION

The due diligence process has resulted in the outcome that an AHIP is not required. The reasoning behind this determination is set out in **Table 2-3**.

Table 2-3: Due Diligence Code application.

Item	Reasoning	Answer
Will the activity disturb either of the following: - the ground surface where archaeological deposits are likely - mature, native trees that may be culturally modified.	The proposed works will disturb the ground surface through excavation and construction, but the likelihood of archaeological deposits has been assessed as low. All mature trees within the study area were inspected and it was concluded that the proposal will not impact any culturally modified trees.	No
Are there any relevant records of Aboriginal heritage on site (AHIMS or from other sources), or landscape features that are likely to indicate presence of Aboriginal objects?	AHIMS indicated no Aboriginal sites within the study area. No landscape features in the study area indicate the likely presence of Aboriginal objects.	No
Will the activity impact Aboriginal objects or landforms with archaeological potential?	There are no known items of Aboriginal significance present in the study area, and landforms with identified archaeological sensitivity are not present.	No
Does the desktop and/or visual assessment confirm that Aboriginal objects will be harmed?	The visual inspection did not identify any Aboriginal objects and it was assessed that there is a low likelihood of there being subsurface archaeological deposits within the study area.	No
AHIP not necessary. Proceed with caution.		

3 MANAGEMENT RECOMMENDATIONS

The undertaking of the due diligence process resulted in the conclusion that the proposed works will have an impact on the ground surface, however, no Aboriginal objects or intact archaeological deposits will be harmed by the proposal. This moves the proposal to the following outcome:

AHIP application not necessary. Proceed with caution. If any Aboriginal objects are found, stop work, and notify Heritage NSW (02 9873 8500 or heritagemailbox@environment.nsw.gov.au). If human remains are found, stop work, secure the site, and notify NSW Police and Heritage NSW.

To ensure the greatest possible protection to the area's Aboriginal cultural heritage values, the following recommendations are made:

- 1) All land and ground disturbance activities must be confined to within the study area, as this will eliminate the risk of harm to Aboriginal objects in areas not assessed. Should the parameters of the proposal extend beyond the assessed areas, then further archaeological assessment may be required.
- 2) All staff and contractors involved in the proposed work should be made aware of the legislative protection requirements for all Aboriginal sites and objects.
- 3) This assessment has concluded that there is a low likelihood that the proposed work will adversely harm Aboriginal cultural heritage items or sites. However, during works, if Aboriginal artefacts or skeletal material are noted, all work should cease and the procedures in the *Unanticipated Finds Protocol* (**Appendix 2**) should be followed.
- 4) Work crews should undergo cultural heritage induction to ensure they recognise Aboriginal artefacts (see **Appendix 3**) and are aware of the legislative protection of Aboriginal objects under the NPW Act and the contents of the *Unanticipated Finds Protocol*.
- 5) The information presented here meets the requirements of the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*. It should be retained as shelf documentation for five years as it may be used to support a defence against prosecution in the event of unanticipated harm to Aboriginal objects.

REFERENCES

- Burra Charter 2013 International Council on Monuments and Sites 2013. *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance*.
- DECCW 2010 DECCW. 2010. *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*. Department of Environment, Climate Change and Water, Sydney.
- Garnsey 1942 Garnsey, E.J., 1942. *A Treatise on the Aborigines of Dubbo and District: Their Camp-Life, Habits and Customs*. Dubbo: Dubbo Museum and Historical Society.
- Kabaila 1998 Kabaila P. 1988. *Wiradjuri Places: The Murrumbidgee river basin*. Black Mountain Projects: Canberra.
- Koettig 1985 Koettig M. 1985. *Assessment of Aboriginal sites in the Dubbo City area*. Report to Dubbo City Council.
- Mitchell 2002 Mitchell, Dr. Peter. 2002. *Description for NSW (Mitchell) Landscapes Version 2*. Department of Environment and Climate Change NSW.
- Oxley 1820 Oxley J. 1820. *Journals of Two Expeditions into the Interior of New South Wales: Undertaken by Order of the British Government in the Years 1817-1818*. London: Murray.
- OzArk 2002 OzArk Cultural Heritage Management. 2002. *Indigenous and non-Indigenous Heritage Survey: Western Plains Zoo Dubbo, NSW*. Report to the ZPB of NSW.
- OzArk 2006 OzArk Environmental & Heritage Management. 2006. *Aboriginal Heritage Study: Dubbo Local Government Area*. Report to Dubbo City Council.
- OzArk 2008 OzArk Environmental & Heritage Management. 2008. *Aboriginal Heritage Assessment: TWPZ, Entry modification*. Report to TWPZ.
- OzArk 2009 OzArk Environmental & Heritage Management. 2009. *Aboriginal Heritage Assessment: Tracker Riley Cycleway Extension, Dubbo, NSW*. Report to Dubbo City Council.
- OzArk 2014 OzArk Environment & Heritage. *Aboriginal Heritage Management: GIS layers as planning tools*. Dubbo Local Government Area. Report for Dubbo City Council.
- OzArk 2016 OzArk Environment & Heritage. 2016. *Central West Local Land Services Travelling Stock Reserves Study*. Report to Central West Local Land Services.

OzArk 2019	OzArk Environment & Heritage. 2019. <i>Aboriginal Cultural Heritage Report: Animal Hospital at Taronga Western Plains Zoo</i> . Report to TWPZ.
OzArk 2020	OzArk Environment & Heritage. 2020. <i>Aboriginal Cultural Heritage Report: Taronga Western Plains Zoo Dam</i> . Report to TWPZ.
OEK 2011	Office of Environment and Heritage. 2011. <i>Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales</i> . Department of Environment, Climate Change and Water, Sydney.
Sturt 1833	Sturt C. 1833. <i>Two expeditions into the interior of southern Australia, during the years 1828, 1829, 1830 and 1831: with observations on the soil, climate, and general resources of the colony of New South Wales</i> . Smith, Elder: London.
Tindale 1974	Tindale A. 1974. <i>Aboriginal Tribes of Australia</i> . University of California Press.

PLATES



Plate 1: View of the study area showing typical regrowth vegetation and ground cover.



Plate 2: View north along an existing track within study area.

APPENDIX 1: AHIMS SEARCH RESULTS



Office of Environment & Heritage

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : TWPZ Platypus 3km

Client Service ID : 591345

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
36-1-0415	WPZ-OS3	GDA	55	648703	6426610	Open site	Valid	Artefact :-		98215
	Contact	Recorders	Doctor Jodie Benton							
36-1-0416	WPZ-OS4	GDA	55	649825	6425977	Open site	Valid	Artefact :-		98215
	Contact	Recorders	Doctor Jodie Benton							
36-1-0417	WPZ-OS5	GDA	55	649895	6425935	Open site	Valid	Artefact :-		98215
	Contact	Recorders	Doctor Jodie Benton							
36-1-0418	WPZ-ST1	AGD	55	650233	6425860	Open site	Valid	Modified Tree (Carved or Scarred) : 1		98215
	Contact	Recorders	Doctor Jodie Benton							
36-1-0419	WPZ-ST2	AGD	55	647066	6426744	Open site	Valid	Modified Tree (Carved or Scarred) : -		98215
	Contact	Recorders	Doctor Jodie Benton							
36-1-0420	WPZ-ST3	AGD	55	649708	6426094	Open site	Valid	Modified Tree (Carved or Scarred) : 1		98215
	Contact	Recorders	Doctor Jodie Benton							
36-1-0421	WPZ-ST4	AGD	55	649255	6427800	Open site	Valid	Modified Tree (Carved or Scarred) : 1		98215
	Contact	Recorders	Doctor Jodie Benton							
36-1-0403	Cobra Street ST	AGD	55	651422	6430087	Open site	Valid	Modified Tree (Carved or Scarred) : 1		98215
	Contact	Recorders	Miss.Rebecca Ogden-Brunell							
36-1-0412	WPZ-IF1	GDA	55	649452	6426033	Open site	Valid	Artefact :-		98215
	Contact	Recorders	Doctor Jodie Benton							
36-1-0413	WPZ-OS1	AGD	55	648259	6426165	Open site	Valid	Artefact :-		98215
	Contact	Recorders	Doctor Jodie Benton							
36-1-0414	WPZ-OS2	AGD	55	648437	6426492	Open site	Valid	Artefact :-		98215
	Contact	Recorders	Doctor Jodie Benton							
36-1-0422	WPZ-ST5	AGD	55	649244	6427771	Open site	Valid	Modified Tree (Carved or Scarred) : 1		98215
	Contact	Recorders	Doctor Jodie Benton							

Report generated by AHIMS Web Service on 17/05/2021 for Alyce Cameron for the following area at Datum :GDA, Zone : 55, Eastings : 645971 - 652102, Northings : 6425054 - 6431170 with a Buffer of 0 meters. Additional Info : Background, etc.. Number of Aboriginal sites and Aboriginal objects found is 115

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Page 1 of 6

Page 1 of 9



Office of Environment & Heritage

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : TWPZ Platypus 3km

Client Service ID : 591345

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
36-1-0432	ORWM-ST1	AGD	55	650428	6425534	Open site	Valid	Modified Tree (Carved or Scarred) : 1		98799
	Contact	Recorders	Doctor Jodie Benton							
36-1-0433	ORWM-ST2	AGD	55	650449	6425393	Open site	Valid	Modified Tree (Carved or Scarred) : 1		98799
	Contact	Recorders	Doctor Jodie Benton							
36-1-0434	WPZ-IF2	AGD	55	649331	6425621	Open site	Valid	Artefact : 2		98895
	Contact	Recorders	Doctor Jodie Benton							
36-1-0435	WPZ-IF2a	AGD	55	649331	6425621	Open site	Valid	Artefact : 1		98946
	Contact	Recorders	Doctor Jodie Benton							
28-1-0025	DLGA-ST-04	AGD	55	647348	6428942	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management							
36-1-0564	DLGA-IF-04	AGD	55	647614	6428735	Open site	Valid	Artefact : 1		
	Contact	Recorders	OzArk Environmental and Heritage Management							
36-1-0565	DLGA-IF-06	AGD	55	646098	6429275	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management							
36-1-0566	DLGA-IF-05	AGD	55	646190	6429069	Open site	Valid	Artefact : 1		
	Contact	Recorders	OzArk Environmental and Heritage Management							
36-1-0567	DLGA-IF-03	AGD	55	646286	6428718	Open site	Valid	Artefact : 1		
	Contact	Recorders	OzArk Environmental and Heritage Management							
36-1-0568	DLGA-OS-07	AGD	55	645988	6429436	Open site	Valid	Artefact : 24		
	Contact	Recorders	OzArk Environmental and Heritage Management							
36-1-0569	DLGA-OS-09	AGD	55	646039	6429168	Open site	Valid	Artefact : 2		
	Contact	Recorders	OzArk Environmental and Heritage Management							
36-1-0570	DLGA-OS-08	AGD	55	646103	6429185	Open site	Valid	Artefact : 3		
	Contact	Recorders	OzArk Environmental and Heritage Management							
36-1-0571	DLGA-OS-06	AGD	55	646278	6428424	Open site	Valid	Artefact : 12		
	Contact	Recorders	OzArk Environmental and Heritage Management							
36-1-0572	DLGA-OS-05	AGD	55	646278	6428424	Open site	Valid	Artefact : 12		
	Contact	Recorders	OzArk Environmental and Heritage Management							
36-1-0573	DLGA-ST-05	AGD	55	646091	6428174	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management							

Report generated by AHIMS Web Service on 17/05/2021 for Alyce Cameron for the following area at Datum :GDA, Zone : 55, Eastings : 645971 - 652102, Northings : 6425054 - 6431170 with a Buffer of 0 meters. Additional Info : Background, etc.. Number of Aboriginal sites and Aboriginal objects found is 115

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Page 2 of 2

Page 2 of 9

 Office of Environment & Heritage		AHIMS Web Services (AWS)					Your Ref/PO Number : TWPZ Platypus 3km			
		Extensive search - Site list report					Client Service ID : 591345			
SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
36-1-0574	Contact Searle	Recorders OzArk Environmental and Heritage Management	AGD	55	646187	6428854	Open site	Valid	Artefact : 4	Permits
	Contact Searle	Recorders OzArk Environmental and Heritage Management								
36-1-0556	Contact Searle	Recorders OzArk Environmental and Heritage Management	AGD	55	650466	6427053	Open site	Valid	Modified Tree (Carved or Scarred) : -	Permits
	Contact Searle	Recorders OzArk Environmental and Heritage Management								
36-1-0557	Contact Searle	Recorders OzArk Environmental and Heritage Management	AGD	55	651652	6427032	Open site	Valid	Modified Tree (Carved or Scarred) : -	Permits
	Contact Searle	Recorders OzArk Environmental and Heritage Management								
36-1-0558	Contact Searle	Recorders OzArk Environmental and Heritage Management	AGD	55	651300	6426770	Open site	Valid	Modified Tree (Carved or Scarred) : -	Permits
	Contact Searle	Recorders OzArk Environmental and Heritage Management								
36-1-0559	Contact Searle	Recorders OzArk Environmental and Heritage Management	AGD	55	651324	6427339	Open site	Valid	Artefact : 5	Permits
	Contact Searle	Recorders OzArk Environmental and Heritage Management								
36-1-0560	Contact Searle	Recorders OzArk Environmental and Heritage Management	AGD	55	651407	6427264	Open site	Valid	Artefact : 2	Permits
	Contact Searle	Recorders OzArk Environmental and Heritage Management								
36-1-0561	Contact Searle	Recorders OzArk Environmental and Heritage Management	AGD	55	651688	6427148	Open site	Valid	Artefact : 18	Permits
	Contact Searle	Recorders OzArk Environmental and Heritage Management								
36-1-0562	Contact Searle	Recorders OzArk Environmental and Heritage Management	AGD	55	651224	6427616	Open site	Valid	Artefact : -	Permits
	Contact Searle	Recorders OzArk Environmental and Heritage Management								
36-1-0563	Contact Searle	Recorders OzArk Environmental and Heritage Management	AGD	55	651353	6427429	Open site	Valid	Artefact : -	Permits
	Contact Searle	Recorders OzArk Environmental and Heritage Management								
36-1-0325	Contact PR-IF_01	Recorders OzArk Environmental and Heritage Management	AGD	55	648720	6428400	Open site	Valid	Artefact : 1	Isolated Find
	Contact M1 Dubbo	Recorders Lloyd Nolan								
36-1-0094	Contact M1 Dubbo	Recorders N Franklin,Margrit Koettig,Rex Silcox	AGD	55	649550	6429950	Open site	Valid	Artefact : -	Open Camp Site 1065
	Contact M2 Dubbo	Recorders N Franklin,Margrit Koettig,Rex Silcox								
36-1-0095	Contact M2 Dubbo	Recorders N Franklin,Margrit Koettig,Rex Silcox	AGD	55	649800	6429050	Open site	Valid	Artefact : -	Open Camp Site 1065
	Contact M3 Dubbo	Recorders N Franklin,Margrit Koettig,Rex Silcox								
36-1-0096	Contact M3 Dubbo	Recorders N Franklin,Margrit Koettig,Rex Silcox	AGD	55	649760	6428410	Open site	Valid	Artefact : -	Open Camp Site 1065
	Contact Dubbo;Cootha;	Recorders N Franklin,Margrit Koettig,Rex Silcox								
36-1-0040	Contact Dubbo;Cootha;	Recorders Michael Pearson	AGD	55	650955	6427521	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree
	Contact	Recorders								

Report generated by AHIMS Web Service on 17/05/2021 for Alyce Cameron for the following area at Datum :GDA, Zone : 55, Eastings : 645971 - 652102, Northings : 6425054 - 6431170 with a Buffer of 0 meters. Additional Info : Background, etc.. Number of Aboriginal sites and Aboriginal objects found is 115

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Page 3 of 9

 Office of Environment & Heritage		AHIMS Web Services (AWS)					Your Ref/PO Number : TWPZ Platypus 3km			
		Extensive search - Site list report					Client Service ID : 591345			
SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
36-1-0130	Contact Dundillamal;	Recorders Warren Bluff	AGD	55	650413	6426385	Open site	Valid	Modified Tree (Carved or Scarred) : 3	Scarred Tree 1333
	Contact dundullimal;	Recorders GDA								
36-1-0157	Contact dundullimal;	Recorders Warren Bluff,OzArk Environmental and Heritage Management,Doctor.Alyce Camer	AGD	55	650460	6426803	Open site	Valid	Artefact : -	Open Camp Site 1333
	Contact GL-IF2	Recorders Warren Bluff,OzArk Environmental and Heritage Management,Doctor.Alyce Camer								
36-1-0163	Contact GL-IF2	Recorders AGD	55	649450	6425600	Open site	Valid	Artefact : 1	Open Camp Site,Scarred Tree	3713
	Contact GL-OS-1	Recorders Jim Kelton								
36-1-0164	Contact GL-OS-1	Recorders AGD	55	649150	6425443	Open site	Valid	Modified Tree (Carved or Scarred) : -,Artefact : -	Open Camp Site,Scarred Tree	3713,102800
	Contact GL-OS-2	Recorders Central West Archaeological and Heritage Services Pty Ltd								
36-1-0165	Contact GL-OS-2	Recorders AGD	55	649610	6425490	Open site	Valid	Artefact : 10	Open Camp Site,Scarred Tree	3713
	Contact Dubbo M4	Recorders Jim Kelton								
36-1-0097	Contact Dubbo M4	Recorders AGD	55	649810	6428350	Open site	Valid	Artefact : -	Open Camp Site	1065
	Contact GL-OS-3	Recorders N Franklin,Margrit Koettig,Rex Silcox								
36-1-0166	Contact GL-OS-3	Recorders AGD	55	649610	6425580	Open site	Valid	Artefact : -	Open Camp Site,Scarred Tree	3713
	Contact GL-OS-4	Recorders Jim Kelton								
36-1-0167	Contact GL-OS-4	Recorders AGD	55	650130	6424930	Open site	Valid	Artefact : -	Open Camp Site,Scarred Tree	3713
	Contact GL-OS-5	Recorders Jim Kelton								
36-1-0168	Contact GL-OS-5	Recorders AGD	55	650080	6424870	Open site	Valid	Artefact : -	Open Camp Site,Scarred Tree	3713
	Contact GL-OS-6	Recorders Jim Kelton								
36-1-0169	Contact GL-OS-6	Recorders AGD	55	648870	6425260	Open site	Valid	Artefact : -, Modified Tree (Carved or Scarred) : -	Open Camp Site,Scarred Tree	3713
	Contact GL-OS-7	Recorders Central West Archaeological and Heritage Services Pty Ltd								
36-1-0170	Contact GL-OS-7	Recorders AGD	55	649029	6425371	Open site	Valid	Artefact : -, Modified Tree (Carved or Scarred) : -	Open Camp Site,Scarred Tree	3713,102800
	Contact GL-OS-8	Recorders Central West Archaeological and Heritage Services Pty Ltd								
36-1-0171	Contact GL-OS-8	Recorders AGD	55	649150	6425740	Open site	Valid	Artefact : -, Modified Tree (Carved or Scarred) : -	Open Camp Site,Scarred Tree	3713
	Contact	Recorders Central West Archaeological and Heritage Services Pty Ltd								

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Page 4 of 9



Office of Environment & Heritage

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : TWPZ Platypus 3km

Client Service ID : 591345

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
36-1-0172	GL-ST-1	AGD	55	649060	6425420	Open site	Valid	Artefact : -	Open Camp Site	3713
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd							
36-1-0174	C-OS-2;	AGD	55	649334	6428326	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	3700
	Contact	Recorders	Jim Kelton							
36-1-0175	C-ST-3	AGD	55	650010	6429740	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	3700
	Contact	Recorders	Jim Kelton							
36-1-0176	C-IF-1 (Dubbo)	AGD	55	649810	6429100	Open site	Valid	Artefact : 1	Isolated Find	3700
	Contact	Recorders	Jim Kelton							
36-1-0177	C-ST-1.	AGD	55	649680	6428790	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	3700
	Contact	Recorders	Jim Kelton							
36-1-0178	C-OS-1 Dubbo	AGD	55	649680	6428790	Open site	Valid	Artefact : -	Open Camp Site	3700
	Contact	Recorders	Jim Kelton							
36-1-0114	M21 Dubbo	AGD	55	651120	6425550	Open site	Valid	Artefact : 25	Open Camp Site	1065
	Contact	Recorders	N Franklin,Margrit Koettig,Rex Silcox							
36-1-0115	M22 Dubbo	AGD	55	650940	6426290	Open site	Valid	Artefact : 219	Open Camp Site	1065
	Contact	Recorders	N Franklin,Margrit Koettig,Rex Silcox							
36-1-0221	OR-ST-9 (Eulomogo)	AGD	55	650036	6427148	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	3737,4738
	Contact	Recorders	Jim Kelton							
36-1-0222	OR-IF-2 (Eulomogo)	AGD	55	650120	6427000	Open site	Valid	Artefact : 1	Isolated Find	3737,4738
	Contact	Recorders	Jim Kelton							
36-1-0223	OR-IF-1 (Eulomogo)	AGD	55	649848	6427271	Open site	Valid	Artefact : -	Isolated Find	3737,4738,98215
	Contact	Recorders	Doctor Jodie Benton,Jim Kelton							
36-1-0224	OR-ST-6 (Eulomogo)	AGD	55	650300	6426330	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	3737,4738
	Contact	Recorders	Jim Kelton							
36-1-0225	OR-ST-1 (Eulomogo)	AGD	55	649240	6428320	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	3737
	Contact	Recorders	Jim Kelton							

Report generated by AHIMS Web Service on 17/05/2021 for Alyce Cameron for the following area at Datum :GDA, Zone : 55, Eastings : 645971 - 652102, Northings : 6425054 - 6431170 with a Buffer of 0 meters. Additional Info : Background, etc.. Number of Aboriginal sites and Aboriginal objects found is 115

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Page 5 of 6

Page 5 of 9



Office of Environment & Heritage

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : TWP2 Platypus 3km

Client Service ID : 591345

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
36-1-0226	OR-ST-2 (Eulomogo)	AGD	55	649280	6428270	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	3737,4738
	Contact	Recorders	Jim Kelton							
36-1-0227	OR-ST-4 (Eulomogo)	AGD	55	650320	6426060	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	3737,4738
	Contact	Recorders	Jim Kelton							
36-1-0021	Dundallimal;	AGD	55	650921	6426608	Open site	Valid	Aboriginal Ceremony and Dreaming : -, Ceremonial Ring (Stone or Earth) : -, Hearth : -, Artefact : -, Grinding Groove : -	Axe Grinding Groove,Mound (Oven),Open Camp Site	
	Contact	Recorders	P Gresser,A.K. Morris							
36-1-0030	Cootha;Dubbo;	AGD	55	650955	6427521	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Michael Pearson							
36-1-0190	K-OS-1;	GDA	55	651870	6427290	Open site	Valid	Artefact : -	Open Camp Site	3348
	Contact	Recorders	Jim Kelton							
36-1-0228	OR-ST-3 (Eulomogo)	AGD	55	650290	6426370	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	3737,4738
	Contact	Recorders	Jim Kelton							
36-1-0229	OR-ST-5 Eulomogo)	AGD	55	650390	6425980	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	3737,4738
	Contact	Recorders	Jim Kelton							
36-1-0191	K-ST-1;	GDA	55	651870	6427290	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	3348
	Contact	Recorders	Jim Kelton							
36-1-0192	K-IF-1;	GDA	55	651940	6427470	Open site	Valid	Artefact : -	Isolated Find	3348
	Contact	Recorders	Jim Kelton							
36-1-0230	OR-ST-8 (Eulomogo)	AGD	55	649740	6427570	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	3737,4738
	Contact	Recorders	Jim Kelton							
36-1-0515	DWTP-OS1	AGD	55	650830	6428395	Open site	Valid	Artefact : 6		
	Contact	Recorders	Jim Kelton							

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Page 6 of 6

Page 6 of 9

 Office of Environment & Heritage AHIMS Web Services (AWS) Extensive search - Site list report Your Ref/PO Number : TWPZ Platypus 3km Client Service ID : 591345										
SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
36-1-0613	Contact Dundullimal Reserve Scarred Tree 1 (DR-ST1)	Recorders AGD		55 650605	6426823	Open site	Valid	Modified Tree (Carved or Scarred) : -	2166,2167,2216,2305	101792
36-1-0614	Contact Dundullimal Reserve Scarred Tree 2 (DR-ST2)	Recorders AGD		55 650695	6426925	Open site	Valid	Modified Tree (Carved or Scarred) : 1		101792
36-1-0615	Contact Dundullimal Reserve Open Site with PAD (DR-OS1-WITH PAD)	Recorders AGD		55 650592	6426739	Open site	Valid	Artefact : 50		
36-1-0594	Contact C-ST-2 (Eulomogo)	Recorders AGD		55 649280	6428370	Open site	Valid	Modified Tree (Carved or Scarred) : -		4738,104289
36-1-0629	Contact Joira Road Open Site 1	Recorders GDA		55 648137	6429460	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
36-1-0676	Contact BR-ST1	Recorders GDA		55 647276	6427911	Open site	Valid	Modified Tree (Carved or Scarred) : -	3656	
36-1-0677	Contact BRIF1	Recorders GDA		55 647380	6427282	Open site	Valid	Artefact : -		
36-1-0747	Contact Obley Road IF-1	Recorders GDA		55 649554	6428288	Open site	Valid	Artefact : -		104289
36-1-0717	Contact WPZ-IF-03	Recorders GDA		55 649138	6426843	Open site	Valid	Artefact : -		
36-1-0718	Contact WPZ-ST-04	Recorders GDA		55 649347	6426815	Open site	Valid	Modified Tree (Carved or Scarred) : -		
36-1-0757	Contact WPZ-IF-04	Recorders GDA		55 649153	6428141	Open site	Valid	Artefact : -		
36-1-0750	Contact JR-OS1 - #36-1-0629 Salvaged artefact relocation	Recorders GDA		55 648137	6429460	Open site	Valid	Artefact : -	4572,4583	
36-1-0781	Contact South sir Roden cutler park	Recorders GDA		55 649662	6429762	Open site	Valid	Artefact : -		
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Page 7 of 9

 Office of Environment & Heritage AHIMS Web Services (AWS) Extensive search - Site list report Your Ref/PO Number : TWPZ Platypus 3km Client Service ID : 591345										
SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
36-1-0275	Contact PR-IF-1	Recorders AGD		55 648720	6428400	Open site	Valid	Artefact : 1	Isolated Find	
36-1-0105	Contact M12 Dubbo	Recorders AGD		55 650360	6426700	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	1065
36-1-0106	Contact M13 Dubbo	Recorders AGD		55 650940	6426590	Open site	Valid	Artefact : -	Open Camp Site	1065
36-1-0107	Contact M14 Dubbo	Recorders AGD		55 651780	6426690	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	1065
36-1-0108	Contact M15 Dubbo	Recorders AGD		55 651200	6426450	Open site	Valid	Artefact : -	Open Camp Site	1065
36-1-0354	Contact BR-IF-01	Recorders AGD		55 648148	6427849	Open site	Valid	Artefact : 1		97606
36-1-0098	Contact M5 Dubbo	Recorders AGD		55 649920	6428100	Open site	Valid	Artefact : -	Open Camp Site	1065
36-1-0099	Contact M6 Dubbo	Recorders AGD		55 650100	6427650	Open site	Valid	Artefact : -	Open Camp Site	1065
36-1-0100	Contact M7 Dubbo	Recorders AGD		55 650100	6427100	Open site	Valid	Artefact : -, Modified Tree (Carved or Scarred) : -	Open Camp Site, Scarred Tree	1065
36-1-0101	Contact M8 Dubbo	Recorders AGD		55 650350	6427000	Open site	Valid	Artefact : -, Modified Tree (Carved or Scarred) : -	Open Camp Site, Scarred Tree	1065
36-1-0102	Contact M9 (a)(b)(c) Dubbo	Recorders AGD		55 650580	6426970	Open site	Valid	Modified Tree (Carved or Scarred) : 3	Scarred Tree	1065
36-1-0103	Contact M10 Dubbo	Recorders GDA		55 650432	6427023	Open site	Partially Destroyed	Shell : -, Potential Archaeological Deposit (PAD) : -, Artefact : 93	Open Camp Site	1065
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Page 8 of 9



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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : TWP2 Platypus 3km

Client Service ID : 591345

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
36-1-0104	M11 Dubbo	GDA	55	650317	6427023	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	1065
	Contact									
		Recorders	N Franklin,Margrit Koettig,Rex Silcox,OzArk Environmental and Heritage Managen					Permits		
36-1-0036	Cootha, Dubbo	AGD	55	649300	6428581	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	1922
	Contact									
		Recorders	Sabu Dunn,Michael Pearson,P Gresser,A.K. Morris					Permits		
36-1-0523	CR-OS-1	AGD	55	646620	6427110	Open site	Valid	Artefact : 4		104289
	Contact									
	T Russell	Recorders	Jim Kelton					Permits		
36-1-0524	D-OS-1, Newell Highway	AGD	55	646300	6426100	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		
	Contact									
	T Russell	Recorders	Jim Kelton					Permits		
36-1-0525	CR-ST-1	AGD	55	647150	6426980	Open site	Valid	Modified Tree (Carved or Scarred) : 1		104289
	Contact									
	T Russell	Recorders	Jim Kelton					Permits		
36-1-0532	PS-ST-1	GDA	55	648045	6428401	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact									
	T Russell	Recorders	Ms.Coral Peckham					Permits		
36-1-0533	PS-OS-1	GDA	55	648543	6428695	Open site	Valid	Artefact : 11		
	Contact									
		Recorders	Ms.Coral Peckham					Permits		
36-1-0534	PS-OS-2	GDA	55	648270	6428358	Open site	Valid	Artefact : 5		
	Contact									
		Recorders	Ms.Coral Peckham					Permits		
36-1-0630	Dundullimal Scarred Tree 1	GDA	55	650995	6426688	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact									
		Recorders	Doctor Jodie Benton,OzArk Environmental and Heritage Management					Permits		
36-1-0704	Macquarie-OS1	GDA	55	651268	6427884	Open site	Destroyed	Artefact : -		103498,103670
	Contact									
		Recorders	OzArk Environmental and Heritage Management,OzArk Environmental and Heritag					Permits	4087	
36-1-0692	DBAS02	GDA	55	649677	6429679	Open site	Valid	Artefact : 1		
	Contact									
		Recorders	Everick Heritage Pty Ltd,Mr.Tim Robins					Permits		
36-1-0693	DBIA02	GDA	55	649444	6429796	Open site	Valid	Artefact : 1		
	Contact									
		Recorders	Everick Heritage Pty Ltd,Mr.Tim Robins					Permits		
36-1-0694	DBIA01	GDA	55	649664	6429679	Open site	Valid	Artefact : 1		
	Contact									
		Recorders	Everick Heritage Pty Ltd,Mr.Tim Robins					Permits		

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Page 9 of 9

APPENDIX 2: ABORIGINAL HERITAGE: UNANTICIPATED FINDS PROTOCOL

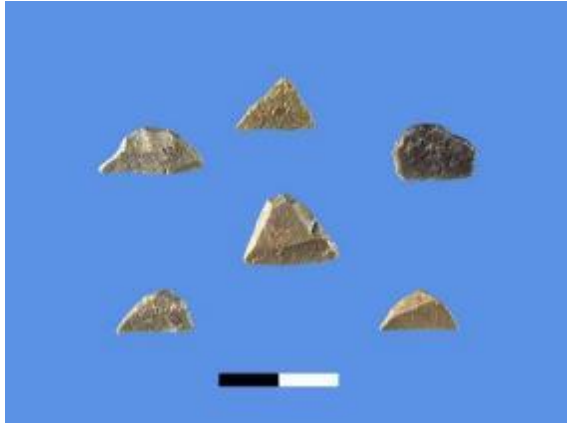
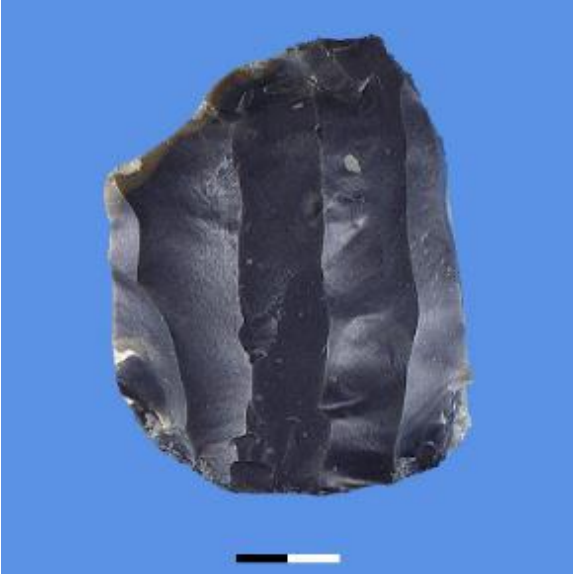
An Aboriginal artefact is anything which is the result of past Aboriginal activity. This includes stone (artefacts, rock engravings etc.), plant (culturally scarred trees) and animal (if showing signs of modification, i.e. smoothing, use). Human bone (skeletal) remains may also be uncovered while onsite.

Cultural heritage significance is assessed by the Aboriginal community and is typically based on traditional and contemporary lore, spiritual values, and oral history, and may also consider scientific and educational value.

The following protocol is to be followed if previously unrecorded or unanticipated Aboriginal object(s) are encountered:

1. If any Aboriginal object is discovered and/or harmed in, or under the land, while undertaking the proposed development activities, the proponent must:
 - a. Not further harm the object
 - b. Immediately cease all work at the location of the find
 - c. Secure the area to avoid further harm to the Aboriginal object
 - d. Notify Heritage NSW as soon as practical on (02) 9873 8500 (heritagemailbox@environment.nsw.gov.au), providing any details of the Aboriginal object and its location
 - e. Not recommence any work at the location of the find unless authorised in writing by Heritage NSW.
2. If Aboriginal burials are unexpectedly encountered during the activity, work must stop immediately, the area secured to prevent unauthorised access and NSW Police and Heritage NSW contacted.
3. Cooperate with the appropriate authorities and relevant Aboriginal community representatives to facilitate:
 - a. The recording and assessment of the find(s)
 - b. The fulfilment of any legal constraints arising from the find(s), including complying with Heritage NSW directions
 - c. The development and implementation of appropriate management strategies, including consultation with stakeholders and the assessment of the significance of the find(s).
4. Where the find(s) are determined to be Aboriginal object(s), recommencement of work in the area of the find(s) can only occur in accordance with any consequential legal requirements and after gaining written approval from Heritage NSW (normally an Aboriginal Heritage Impact Permit).

APPENDIX 3: ABORIGINAL HERITAGE: ARTEFACT IDENTIFICATION

	
Retouched blades (scale = 1cm)	Flakes
	
Microliths (scale = 1cm)	Scraper (scale = 1cm)
	
Flake characteristics (scale = 1cm)	Core from which flakes have been removed (scale = 1cm)