NSW National Parks and Wildlife Service

Review of environmental factors: Boundary management trail, fencing and dam decommissioning at Koonaburra National Park

Environment and Heritage Group, Department of Climate Change, Energy, the Environment and Water; www.environment.nsw.gov.au; EHG 2024/0014; March 2024.

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1. Introduction

1.1 Background

Koonaburra National Park (NP) was reserved in December 2021 and is located off The Wool Track (Cobar-Ivanhoe Road). The Koonaburra NP site plan is depicted on **Figure 1**. It is in Cobar Local Government Area (LGA) and the State seat of Barwon.

NPWS manages a registered Australian Carbon Credit Unit (ACCU) Scheme carbon sequestration project at Koonaburra NP with the Clean Energy Regulator. The carbon sequestration project uses the human-induced regeneration (HIR) carbon farming methodology, which is designed to achieve forest cover through changes in land management practices, including increased feral animal control. The resulting increase in vegetation sequesters additional carbon.

1.2 Brief description of the proposal

As part of the carbon sequestration project, NPWS proposes to:

- clear and grade a 6 metre (m) boundary management trail adjacent to Koonaburra NP's perimeter fence (approximately 87 km), with potential for a future upgrade to fire trail standard(i.e. addition of turning and passing bays at the required spacing)
- upgrade perimeter fencing to exclude stock and limit movement of feral goats into the property as required in cooperation with neighbours, with a give-and-take boundary alignment of one sector of fence to fully incorporate 'Shared Dam' as part of a neighbouring property
- removal of artificial water sources to reduce incentives for feral goat movement into the park by decommissioning up to 8 dams, where not required for access to water for fire management, and construction of goat-proof fencing around 4 dams as seen on **Figure 2**.

More detail on the proposed activity is provided in Section 6.

For the purposes of this Review of Environmental Factors (REF), the investigation area is a 10-m corridor adjoining the boundary fence along the perimeter's interior and a 100 m buffer area around every dam from the toe of the bank (i.e. outer edge of the earth embankment).

1.3 Estimated development cost of proposal

The cost of the proposal is estimated to be up to $1.35 million. This is made up of boundary clearing, provision of fencing materials and dam infill costs.

1.4 Estimated duration of proposal

The boundary management trail works will commence in approximately March 2025 for intended completion by the end of the year.

The dam decommissioning and fencing works will commence in March 2025. Dams will be decommissioned in a staged process, and it is anticipated that the entire fencing and decommissioning works will take approximately 60 months to complete. As per the Boundary Fencing Policy, the installation of perimeter fencing will be undertaken in collaboration with by the neighbouring property owners. Hence, the fencing timeline will be negotiated with each individual landholder.

Figure 1: Location of Koonaburra NP

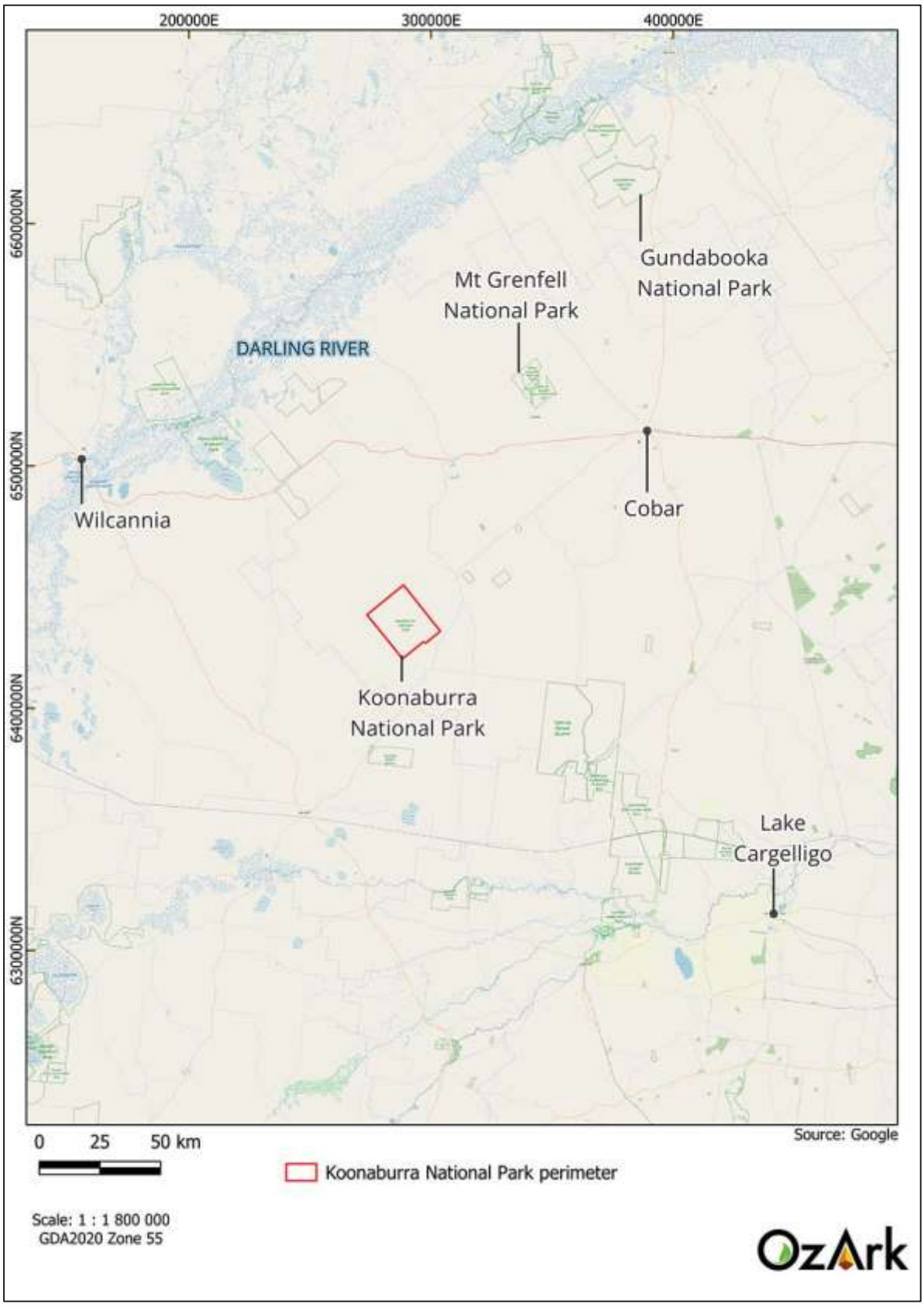
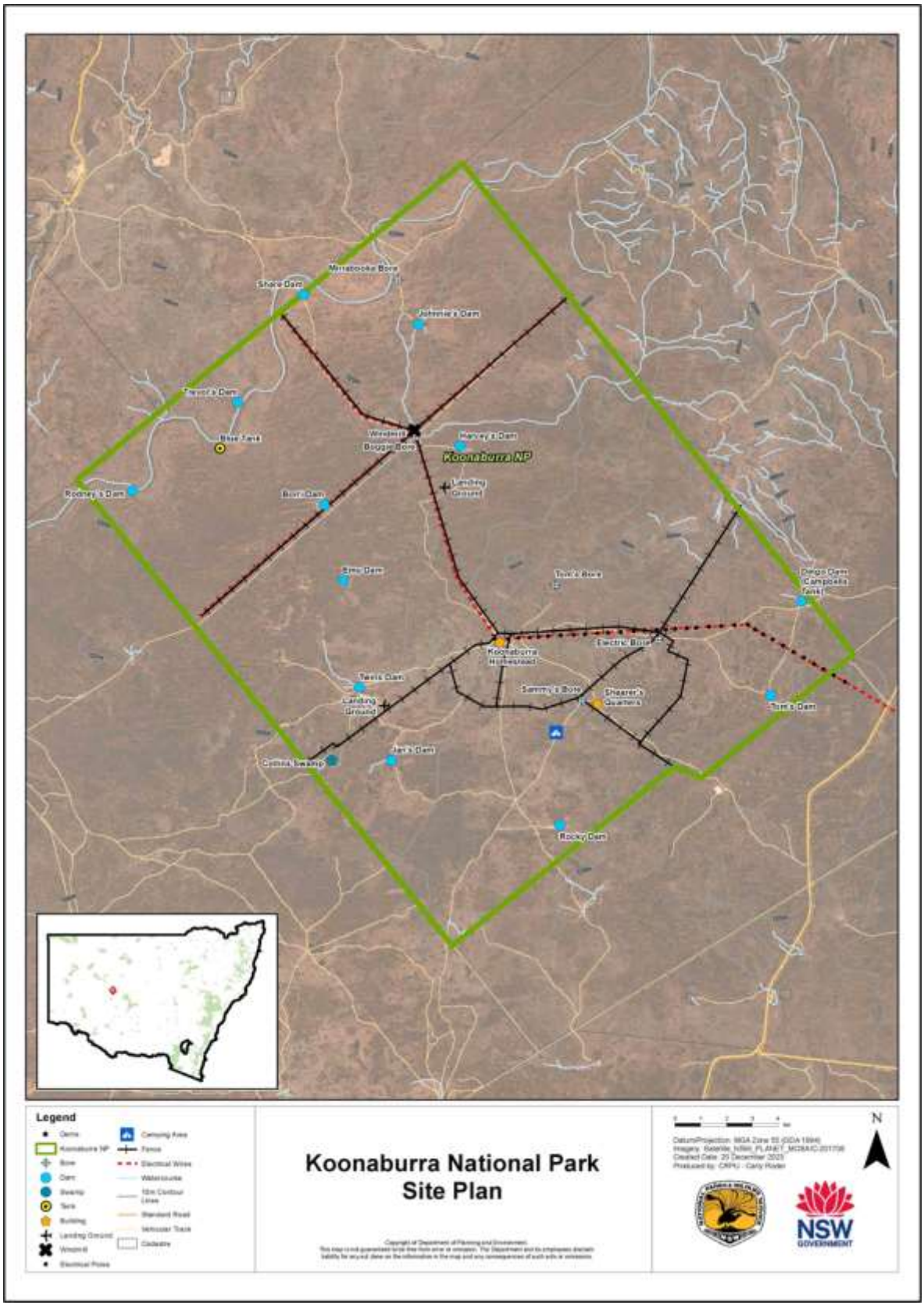


Figure 2. Location of the activity



2. Proponent's details

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Koonaburra NP

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3. Permissibility and assessment pathway

3.1 Permissibility under NSW legislation

The following sections outline how the activity is permissible under applicable NSW legislation.

3.1.1 National Parks and Wildlife Act 1974

On land reserved or acquired under the National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NPW Act) establishes the National Parks and Wildlife Service (NPWS), which is responsible for the control and management of all national parks, historic sites, nature reserves and Aboriginal areas (among others). The main aim of the Act is to conserve the natural and cultural heritage of NSW. **Section 2A Objects of Act** are provided below.

(1) The objects of this Act are as follows—

a. the conservation of nature, including, but not limited to, the conservation of—
   (i) habitat, ecosystems and ecosystem processes, and
   (ii) biological diversity at the community, species and genetic levels, and
   (iii) landforms of significance, including geological features and processes, and
   (iv) landscapes and natural features of significance including wilderness and wild rivers,

b. the conservation of objects, places or features (including biological diversity) of cultural value within the landscape, including, but not limited to—
   (i) places, objects and features of significance to Aboriginal people, and
   (ii) places of social value to the people of New South Wales, and
   (iii) places of historic, architectural or scientific significance,

c. fostering public appreciation, understanding and enjoyment of nature and cultural heritage and their conservation,

d. providing for the management of land reserved under this Act in accordance with the management principles applicable for each type of reservation.

The proposal is consistent with the objectives of Section 2A of the NPW Act, particularly objectives (a)(i), (ii), (b)(i), (iii), and (d) above. This is achieved through the outcomes of the proposed activities, including the reduction of feral goat numbers in the park and improved access for fire management operations. These will allow for improved conservation gains through successful revegetation of the park.

Section 30E of the NPW Act provides the following Management Principles for national parks:

a. conserve biodiversity, maintain ecosystem functions, protect geological and geomorphological features and natural phenomena and maintain natural landscapes

b. conserve places, objects, features and landscapes of cultural value

c. protect the ecological integrity of one or more ecosystems for present and future generations

d. promote public appreciation and understanding of the park's natural and cultural values

e. provide for sustainable visitor or tourist use and enjoyment that is compatible with conservation of natural and cultural values
f. provide for sustainable use (including adaptive reuse ['adaptive reuse' as defined by the NPW Act]) of any buildings or structures or modified natural areas having regard to conservation of natural and cultural values
g. provide for appropriate research and monitoring.

This proposal is consistent with principles (a), (b), (c) and (d) as the proposal aims to improve the ecological integrity of the park through reduction of threats to its natural and cultural heritage by feral animals and fire, and enabling the park to become an important conservation reserve suitable for future public appreciation.

Park-specific plans

A Statement of Management Intent (SMI) for the park was published in July 2023. A Plan of Management (PoM) has not yet been prepared.

The SMI provides for a range of Key Management Directions (Section 6) that covers the main direction for the park management. Main points from Section 6 are:

- Management of fire with the park fire management strategy
- Provide opportunities for Aboriginal people to access country and support non-commercial collection of medicinal plants and bush tucker
- Facilitate surveys, monitoring and assessment of natural and cultural values
- Conduct feral animal control and weed control
- Undertake ecological restoration and vegetation rehabilitation works as required as by the carbon sequestration project
- Undertake other environmental repair and threat management programs
- Provide visitor facilities to ensure safe access and sustainable visitor use
- Close roads and trails not required for park management or public visitation. Construction new roads and trails as required.
- Adaptively reuse existing infrastructure for park management
- Additional infrastructure will be provided at Koonaburra homestead for NPWS Staff accommodation purposes. Any other infrastructure at the behest of Branch Director.
- Decommission water infrastructure such as dams and bores not required for park management
- Review other infrastructure to determine beneficial reuse for park management
- Decommission the former pastoral infrastructure that is not required, provided it is consistent with any heritage values and/or assessments.
- Stabilise or remove derelict structures, infrastructure and facilities as appropriate.
- Non-intrusive works may be undertaken to protect cultural heritage from further deterioration
- Prepare a plan of management.

The proposal is consistent with Key Management Directions under the SMI, including directions to manage fire, conduct feral animal control, undertake vegetation rehabilitation works as required by the carbon project, to construct new roads and trails as required, and to decommission water infrastructure not require for park management, including for firefighting.

The Koonaburra NP Fire Management Strategy 2024 has been developed and will be used to guide fire management within the park. Fire trails, boundary fences, powerline clearing

and waterpoints will be managed in accordance with the Farm Management and Permanence Plan (FMPP) developed for the carbon project.

Assets of intergenerational significance

Not applicable

Leasing, licensing and easement provisions

Not applicable

Internal NPWS projects

Section 8 Miscellaneous functions of Secretary and **Section 12 Powers and functions of Service** provide for the management and maintenance of land reserved under the NPW Act; as well as the provision of facilities and opportunities for sustainable visitor use and enjoyment of the land. This project is consistent with these sections of the NPW Act.

3.1.2 Wilderness Act 1987 (for activities in wilderness areas)

Not applicable. The site is not listed under the Wilderness Act.

3.1.3 Biodiversity Conservation Act 2016

The activity is consistent with the biodiversity conservation objectives of the *Biodiversity Conservation Act 2016* (BC Act). The BC Act seeks to:

- conserve biological diversity at bioregional and state scales
- maintain the diversity and quality of ecosystems and enhance their capacity to adapt to change and provide for the needs of future generations
- assess the extinction risk of species and ecological communities and identify key threatening processes through an independent and rigorous scientific process
- establish a framework to avoid, minimise and offset the impacts of proposed development and land use change on biodiversity.

A key aim of the proposal is to reduce the impacts of key threatening processes (namely the ecological consequences of high frequency fire, and competition and habitat degradation by feral goats).

Section 7 of the BC Act provides the environmental assessment requirements for activities being assessed under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). If a significant impact is likely, the environmental impact statement is to be accompanied by a Species Impact Statement, or if the proponent so elects – a biodiversity development assessment report. Section 7.2(1)(a) and 7.3 describe the assessment requirements and thresholds for what is considered a significant impact.

After competition of the 5-Part Tests of Significance, it is concluded no threatened BC Act listed species will be significantly impacted by this proposal (See Appendix). Safeguards outlined in this REF aim to reduce the impact of any flora and fauna likely to be within the proposed activity's area.

3.1.4 NSW Reconstruction Authority Act 2022

The primary objective of the *NSW Reconstruction Authority Act* 2022 is to promote community resilience to the impact of disasters in NSW through disaster prevention, preparedness and adaptation; and recovery and reconstruction following disasters. The

State Disaster Mitigation Plan and Disaster Adaptation Plans are prepared as part of the Authority's remit.

The proposed works are consistent with the NSW Reconstruction Act 2022 and the State Disaster Mitigation Plan 2024-2026. There are no anticipated increases in flood behaviour as the project is aimed at protecting the revegetation of the park, which will moderate the hydrological cycle and reduce runoff from the park.

Koonaburra National Park Fire Management Strategy (NPWS 2024) will reduce the risk associated with bushfires in the park. The fire management strategy will be updated to reflect the new boundary trail and the reduction in water points during the implementation of the proposal.

3.1.5 Rural Fires Act 1997

The proposed works are consistent with the provisions of the *Rural Fires Act 1997*. Under this Act, NPWS is a prescribed firefighting authority and is responsible for the control and suppression of all fires on lands that it manages. The objectives of the Rural Fires Act are to provide for:

- the prevention, mitigation and suppression of fires
- coordination of bushfire fighting and prevention
- protection of people and property from fires
- protection of the environment.

The proposal is consistent with the current Koonaburra National Park Fire Management Strategy (NPWS 2024). The fire management strategy will be updated to reflect the new boundary trail and the reduction in water points during the implementation of the proposal.

3.2 Environmental Planning and Assessment Act 1979

3.2.1 Assessment pathway

It is confirmed that a REF is the applicable assessment pathway because each of the following apply:

- The activity is not declared to be state significant infrastructure under s 2.13 of the Planning Systems SEPP.
- The activity may be undertaken without development consent under the provisions of s 2.73(1)(a) of the Transport and Infrastructure SEPP as it is:
    - on land reserved under the NPW Act or acquired under Part 11 of the NPW Act, **and**
    - for a purpose authorised under the NPW Act.
- The activity is not in a coastal wetland or littoral rainforest, or it does not otherwise meet the criteria for development requiring consent outlined in s 2.7(2) of the Resilience and Hazards SEPP.
- The activity is not coastal protection works or, if coastal protection works, the activity is one of the types of coastal protection works that may be carried out by or on behalf of a public authority without development consent.
- The activity is not a type of development requiring development consent under s 2.9 of the Resources and Energy SEPP.

- The activity is not declared to be exempt development under an environmental planning instrument or fails to fully meet the requirements for exempt development.

3.2.2 Strategic plans

The **Far West Regional Plan 2036** has the following components that align with the project.

Direction 5: Promote Tourism Opportunities – supports offering of an authentic outback experience which will be enhanced by the fencing of the park and removal of feral goats.

Direction 10: Enhance the economic self-determination of Aboriginal communities – allows for the establishment and partnership between NPWS and Aboriginal groups to increase Aboriginal employment opportunities within national parks.

Direction 13: Protect and manage environmental assets – these natural resources underpin industries and are the foundation of a significant tourism sector, which has flow on economic benefits. Action 13.1 promotes mapping potential high environmental value areas and protect these areas through local plans and strategies.

Direction 18: Respect and protect Aboriginal cultural heritage assets – ongoing data collection will identify and protect cultural heritage assets. Continue to work with Aboriginal communities to jointly manage national parks and reserves to contribute to economic, social and cultural outcomes for Aboriginal communities.

The **Cobar Local Strategic Planning Statement 2020** supports Industry Sustainability via Section 8.3 Tourism, specifically mentioning national parks as a key attraction; and promoting a Healthy and Cohesive Community via Section 9.4 Celebrate Heritage Assets and documenting Aboriginal history and sites on park.

3.3 Other relevant NSW legislation

3.3.1 Coal Mine Subsidence Compensation Act 2017

Not applicable. The activity is not taking place in a mine subsidence district.

3.3.2 Fisheries Management Act 1994

The activity is consistent with the objects of the *Fisheries Management Act 1994* (FM Act).

Although publicly available mapping does not identify Sandy Creek as Key Fish Habitat, the Department of Primary Industries and Regional Development (DPIRD) – Fisheries has advised that it expects the creek to be treated as KFH. As such, KFH occurs within the proposal site. However, no Protected Riparian Land (PRL), as recognised by the NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) occurs within the 10 km search area. Furthermore, no threatened fish species are mapped as potentially occurring within the 10 km search area.

NPWS has given written notice of the proposed works in accordance with Section 199 under Part 7 of the FM Act. DPIRD Fisheries has confirmed it is satisfied with the mitigation measures that have been outlined for the trail where it intersects Sandy Creek.

3.3.3 Heritage Act 1977

There are no known heritage items listed on the State Heritage Register (SHR) in the park.

A search of the NPWS Historic Heritage Information Management System HHIMS found the following listed items:

- Koonaburra Pastoral Station
- Homestead; Koonaburra
- Shearers quarters; Koonaburra
- Shearing Shed; Koonaburra
- Ancillary buildings - homestead precinct; Koonaburra

No impact to these listed items is anticipated.

3.3.4 Marine Estate Management Act 2014

Not applicable.

3.4 Commonwealth legislation

3.4.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) applies as the activity is on land that contains the following, or the activity may affect:

- nationally listed threatened species and ecological communities
- listed migratory species.

Any potential impact to listed species is considered to be non-significant and no approval from the Australian Government is required. Further information provided in Sections 8.5 and 9.7.

3.4.2 Native Title Act 1993

The Ngemba, Ngiyampaa, Wangaaypuwan and Wayliwan People's native title consent determination was handed down on 15 August 2024 (refer NCD2024/002). This determined that Native Title had been extinguished over Koonaburra NP.

Justice Perry noted in the consent determination orders the intention of the Ngemba, Ngiyampaa, Wangaaypuwan and Wayilwan native title holders and NSW to make an agreement under section 47C of the Native Title Act (Cth) to disregard prior extinguishment in relation to the national park areas.

Until such time as an agreement is negotiated, NPWS will continue to work with Native Title holders through NTS Corp for all relevant cultural matters pertaining to park management.

These determination orders allow NPWS to continue to involve the Ngemba, Ngiyampaa, Wangaaypuwan and Wayilwan People in the progress of the proposal, including in the mitigation measures proposed to limit impacts to Aboriginal cultural heritage in the Aboriginal Cultural Heritage Assessment Report (ACHAR).

3.4.3 Carbon Credits (Carbon Farming Initiative) Act 2011

The revegetation project is being managed in accordance with an agreement under the *Carbon Credits (Carbon Farming Initiative) Act 2011* (CFI Act). The proposal is consistent with meeting the obligations for the carbon project in accordance with the *Carbon Credits (Carbon Farming Initiative) Rule 2015* and the *Carbon Credits (Carbon Farming Initiative) (Human-Induced Regeneration of a Permanent Even-Aged Native Forest—1.1) Methodology Determination 2013*.

For example, NPWS has an obligation to manage both hazard reduction burns and wildfire in the carbon project area, and the capacity to meet this obligation will be enhanced by the establishment of the perimeter trail.

3.5 Consistency with national parks policy

Policy name	How proposal is consistent
Boundary Fencing	The proposal is consistent with Section 4 of the BFP, as the construction of the replacement boundary fence will: • provide a clear physical indication of park boundaries • help to protect and conserve the natural or cultural values of a park • prevent the movement of domestic stock onto a park
Managing parks prior to a plan of management policy	The proposal is consistent with the policy to manage the park consistent with the NPWS Act, other relevant legislation, and existing park management policies (including this policy). The proposal is consistent with the Statement of Management Intent for Koonaburra NP.
Neighbour relations policy	The proposal is consistent with NPWS policy to seek to involve neighbours in decision-making processes and work together on management activities that address landscape scale issues.
Carbon Positive by 2028	The proposal is consistent with the carbon positive plan, which recognises the development of the Koonaburra NP carbon project as a priority initiative.

3.6 Summary of licences and approvals

3.6.1 Approval required from National Parks and Wildlife Service

Internal NPWS approval or authorisation, including expenditure, is required.

3.6.2 Other approvals

An Aboriginal Heritage Impact Permit (AHIP) under Section 90 of the NPW Act is required.

3.6.3 Publication triggers

Table 1. Triggers for publication of the review of environmental factors

Permit or approval	Applicable?
Fisheries Management Act, sections 144, 200, 205 or 219	No (Section 199 only)
Heritage Act, section 57(1) (commonly known as a section 60 and **not** an Exemption under section 57(2))	No
National Parks and Wildlife Act, section 90 (AHIP)	Yes
Protection of the Environment Operations Act 1997, sections 47–49 or 122	No

The REF triggers publication requirements due to the need for an AHIP.

The Minister administering the FM Act must be given written notice of works that involve dredging and/or reclamation in mapped waterways, in accordance with Section 199 under Part 7 of the FM Act. DPIRD Fisheries has confirmed it is satisfied with the mitigation measures that have been outlined for the trail where it intersects Sandy Creek.

4. Consultation – general

4.1 Statutory consultation

4.1.1 Transport and Infrastructure SEPP

The proposal does not trigger consultation with relevant authorities under the State Environmental Planning Policy (Transport and Infrastructure) 2021 (Transport and Infrastructure SEPP), as identified in the following table.

Table 2. Consultation triggers under the Transport and Infrastructure SEPP

Authority (TISEPP section)	Trigger	Applicable to proposal?
Consultation with local council (s 2.10)	Development with impacts on council infrastructure or services (such as stormwater, sewer, water, roads and footpaths)	No
Consultation with local council (s 2.11)	Development with impacts on heritage items listed under the local environmental plan (LEP)	No
Consultation with local council (s 2.12)	Development that will change flood patterns on flood-liable land	No
Consultation with State Emergency Service (s 2.13)	Development on flood-liable land	No
Consultation with local council (s 2.14)	Development that is inconsistent with a certified coastal management program affecting land within the mapped coastal vulnerability area.	No
Consultation with NPWS (s 2.15(2)(a))	Development adjacent to land reserved or acquired under the NPW Act	No
Consultation with NPWS (s 2.15(2)(b))	Development on land in Zone C1 that is yet to be reserved under the NPW Act	No
Consultation with Transport for NSW (s 2.15(2)(c))	Development comprising a fixed or floating structure in or over navigable waters	No
Consultation with the Director of the Siding Spring Observatory (s 2.15(2)(d))	Development that may increase the amount of artificial light in the night sky and that is on land within the mapped dark sky region	No
Consultation with the Cth Department of Defence (s 2.15(2)(e))	Development located within the buffer around the defence communications facility near Morundah as mapped under the Lockhart, Narrandera or Urana LEPs	No
Consultation with the Subsidence Advisory NSW (s 2.15(2)(f))	Development on land in a mine subsidence district.	No
Consultation with the Willandra Lakes Region World Heritage Advisory Committee and Heritage NSW (s 2.15(2)(g))	Development on, or reasonably likely to have an impact on, a part of the Willandra Lakes Region World Heritage Property	No

Authority (TISEPP section)	Trigger	Applicable to proposal?
Consultation with the Western Parkland City Authority (s 2.15(2)(h))	Development within a Western City operational area (Western Parkland City Authority Act 2018, Schedule 2) with a capital investment value of $30 million or more	No
Consultation with Transport for NSW (s 2.221)	Traffic-generating development listed in Schedule 3	No

4.1.2 Other statutory consultation

As the proposal involves dredging and/or reclamation in mapped waterways, the proponent must give the Minister written notice of the proposed work in accordance with Section 199 under Part 7 of the FM Act. As above, NPWS has given notice and DPIRD Fisheries has confirmed it is satisfied with the mitigation measures that have been outlined for the trail where it intersects Sandy Creek.

4.2 Targeted consultation

4.2.1 Adjacent landowners

NPWS has engaged in ad hoc consultation with the neighbouring landholders of Koonaburra NP since acquiring the property in 2021. Discussions with neighbouring landholders have included the registration and management of the carbon project, NPWS's approach to feral animal control and fire management, potential upgrades to perimeter fencing and NPWS's environmental approvals requirements for works on park.

As the proposal progresses, NPWS will engage in targeted consultation with neighbouring landholders where fencing upgrades are recommended, including with the neighbouring landholder who adjoins Share Dam about potential changes to the existing fence alignment to exclude Share Dam from the park.

4.2.2 Wider community consultation and/or notification of works

Not applicable.

4.2.3 Interest groups and/or notification

Not applicable.

5. Consultation – Aboriginal communities

5.1 Native title notification requirements

The Ngemba, Ngiyampaa, Wangaaypuwan and Wayliwan People's native title consent determination was handed down on 15 August 2024 (refer NCD2024/002). This determined that Native Title had been extinguished over Koonaburra NP.

Justice Perry noted in the consent determination orders the intention of the Ngemba, Ngiyampaa, Wangaaypuwan and Wayilwan native title holders and NSW to make an agreement under section 47C of the Native Title Act (Cth) to disregard prior extinguishment in relation to the national park areas.

Until such time as an agreement is negotiated, NPWS will continue to work with Native Title holders through NTS Corp for all relevant cultural matters pertaining to park management.

These determination orders allow NPWS to continue to involve the Ngemba, Ngiyampaa, Wangaaypuwan and Wayilwan People in the progress of the proposal, including in the mitigation measures proposed to limit impacts to Aboriginal cultural heritage in the Aboriginal Cultural Heritage Assessment Report (ACHAR).

5.2 Other consultation with Aboriginal communities

There are currently no formal joint management arrangements or agreements for Koonaburra NP.

Aboriginal community members were given the opportunity to nominate as Registered Aboriginal Parties and have been consulted through the Aboriginal Cultural Heritage Assessment process in accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents (NSW DECCW 2010).

Representatives of the Ngemba, Ngiyampaa, Wangaaypuwan and Wayilwan People participated in fieldwork at Koonaburra NP to inform the Aboriginal Cultural Heritage Assessment Report (ACHAR).

6. Proposed activity (or activities)

6.1 Location of activity

Table 3. Summary of activity location

Description of location	Koonaburra National Park is located off The Wool Track, approximately 140 kilometres (km) southwest of Cobar and 95 km northeast of Ivanhoe in the Cobar Shire Local Government Area		
Park name	Koonaburra National Park		
Other tenures	N/A		
Lot/DP	Lot 4591 DP767755		
Street address	11408 The Wool Track Kulwin NSW 2835 (**Figure 3**)		
Site reference	Easting: 262771–312771	Northing: 6411474– 6461474	MGA zone: 55

6.2 Description of the proposed activity

6.2.1 The proposed activity: pre-construction, construction, operation and remediation

The proposed development activity includes the following:

Boundary management trail and perimeter fencing works

- Clearing and grading a 6-metre corridor adjoining the park perimeter for a boundary management trail.
- If deemed necessary, trail may be subsequently upgraded under the Fire Access and Fire Trail Program, with grading of additional period passing bays and turnarounds per the NSW RFS Fire Trail Standards within the investigation area.
- Ongoing maintenance of trail as required.

Perimeter fencing works

- Staged replacement of existing perimeter fencing, as required on the basis of a perimeter fencing assessment. Fencing agreements are to be agreed with neighbours under the NPWS Boundary Fencing Policy. Replacement fence to be standard stock-proof fencing as used commonly in the region.
    - NPWS to supply fencing materials and the neighbour to undertake or organise construction.
- Where fencing passes Share Dam, fenceline is to be agreed with neighbour on NPWS side of Share Dam, within the investigation area. Perimeter management trail to follow adjacent to fence on NPWS side of boundary.
- Ongoing maintenance of fencing as required.

Dam works

- Fencing and/or decommissioning of artificial water points associated with previous land use for the purpose of restricting access to water for feral animals (goats) on the property.
- Construction of fences for the purposes of goat exclusion within the investigation area around **Emu, Twin and Harvey's dams**, including clearing and grading for construction if required.
    - Emu, Twin and Harvey's dams have been selected for retention based on bushfire management considerations, potential ecological value and distance from park boundary.
    - Fencing to include access points for vehicles to enable water access for firefighting purposes.
    - Ongoing maintenance of installed fences.
- Potential staged decommissioning or breaking of **Rodney's, Trevor's, Johnnie's, Borri, Jan's, Rocky, Tom's and Dingo dams** over a period of up to 5 years from determination of the REF (staging to enable macropod management at decommissioned dams).
- The decommissioning process may vary based on site characteristics but is intended to involve:
    - diversion of inflow or breaking of fill point to dewater the dam
    - compromising the dam structure to ensure normal unobstructed water flow by breaking the dam wall
    - use of soil material from dam wall to fill dam basin as required
    - removal of associated structures (if any) at dam.
- Vehicles and machinery including excavator, backhoe or Positrack and 4x4 ute may be required - requirements may vary by dam.
- Dams will be only decommissioned where not required for access to water for firefighting. If additional dams are subsequently identified for retention for access to water or other reasons, or decommissioning is otherwise identified to be inappropriate or impractical, these dams may be fenced as per Emu, Twin and Harvey's dams.

6.2.2 The activity footprint (size of the area of impact)

The impact footprint is 89.78 ha in area, of which 12.15 ha is free from native vegetation (access tracks and bare ground). The remaining 77.63 ha consists of native vegetation that would be removed or disturbed by the proposal.

The activity footprint includes the following two components:

- A 10-metre (m) corridor adjoining the boundary fence of Koonaburra NP along the perimeter's interior (see **Figure 4** and **Figure 5**)
- A 100-m buffer area from the toe of the bank (i.e. outer edge of the earth embankment) around each of the twelve dam locations within Koonaburra NP (see **Figure 4** and **Figure 5**).

6.2.3 Proposed construction methods, materials and equipment

The conceptual preferred **fence designs** include the following specifications:

- The fence will be at least 1070 millimetres (mm) high and will be constructed of hinge joints with a heavy top and bottom wire. The bottom wire will be no more than 50 mm from the ground.

- The post and strainers will be round galvanised pipe to prevent goats from climbing and are proposed to be placed every 4-5 m to maintain a taut fence.
- A barbed top wire is not recommended, but 'safe-twist barbless wire' may be trialled as an alternative.
- A middle wire may be included for strength to withstand kangaroo, emu and feral pig impacts.

If required a mesh apron can be installed to prevent small goats getting under the fence.

The **dam decommissioning** process may vary based on site characteristics but is intended to involve:

- diversion of inflow or breaking of fill point to dewater the dam
- compromising the dam structure to ensure normal unobstructed water flow by breaking the dam wall
- use of soil material from dam wall to fill dam basin as required
- removal of associated structures (if any) at dam
- vehicles and machinery including excavator, backhoe or Positrack and 4x4 ute may be required - requirements may vary by dam.

6.2.4 Receival, storage and on-site management for materials used in construction

The fencing will be undertaken by the neighbouring landholders, as per the Boundary Fencing Policy.

The dam breaking will require a minimal amount of plant (excavator, backhoe or Positrack and 4x4 ute) as the embankment will be used to fill in the dam as required.

Equipment/plant may be kept overnight on site within the previously assessed activity footprint area as required.

6.2.5 Earthworks or site clearing including extent of vegetation to be removed

The impact footprint is 89.78 hectares (ha) in area, of which 12.15 ha is free from native vegetation (access tracks and bare ground). The remaining 77.63 ha consists of native vegetation that would be removed or disturbed by the proposal.

6.2.6 Environmental safeguards and mitigation measures

NPWS and their contractors will undertake the environmental safeguards and mitigation measures outlined in Section 9 (Impact Assessment).

6.2.7 Sustainability measures – including choice of materials and water/energy efficiency

NPWS will ensure that any materials used in the construction of the fences and management of the dam infills, will be from an appropriately sourced material.

6.2.8 Construction timetable and staging and hours of operation

The works are anticipated to begin in early 2025 and take up to five years to be completed.

Figure 3: Regional location of Koonaburra National Park.

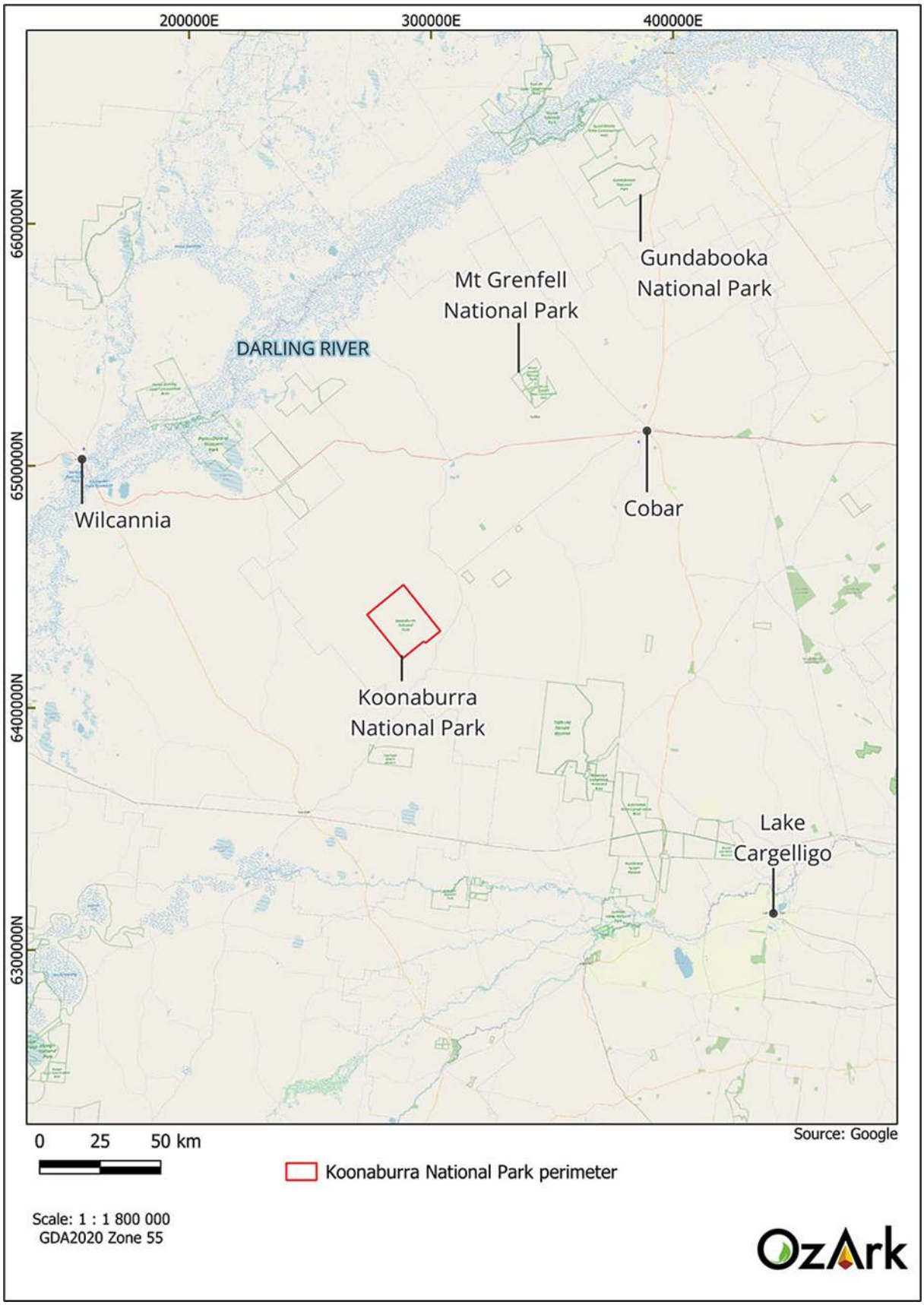


Figure 4: Northern portions of the study area.

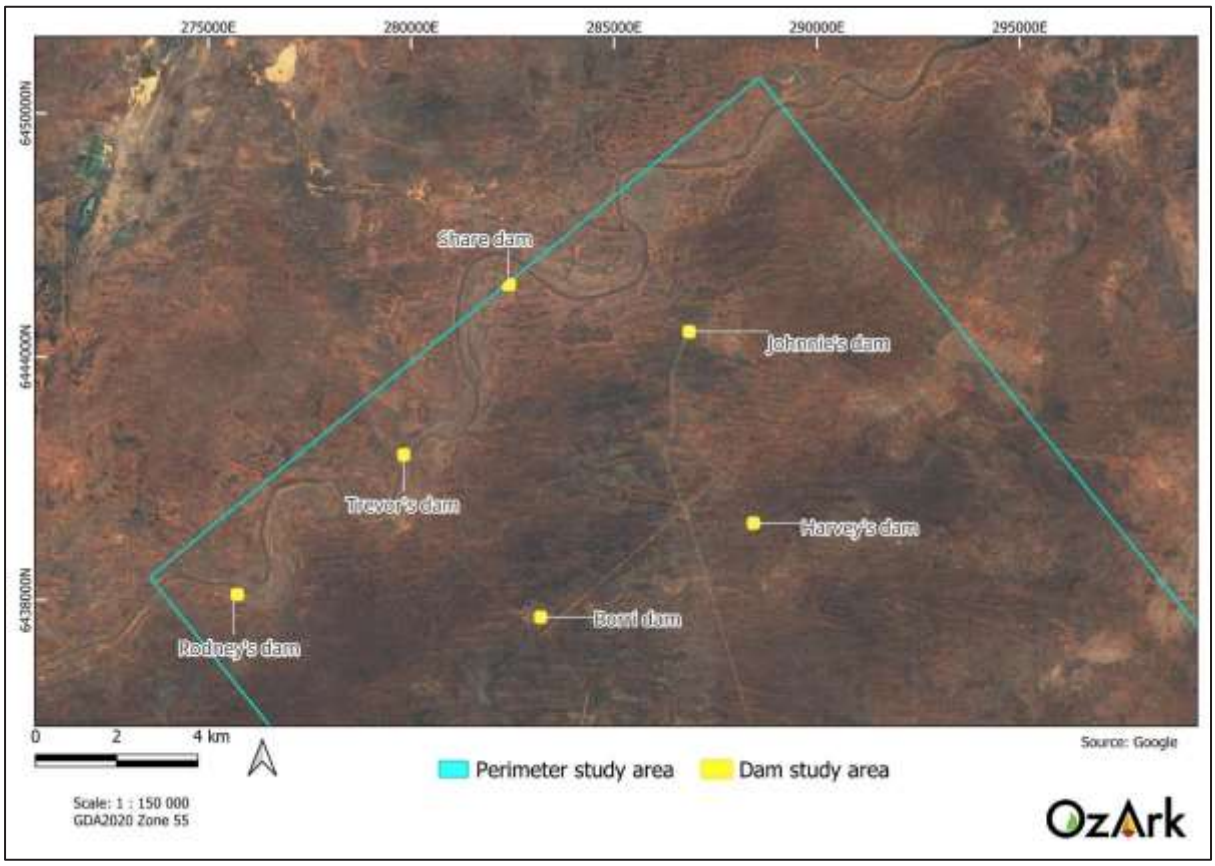
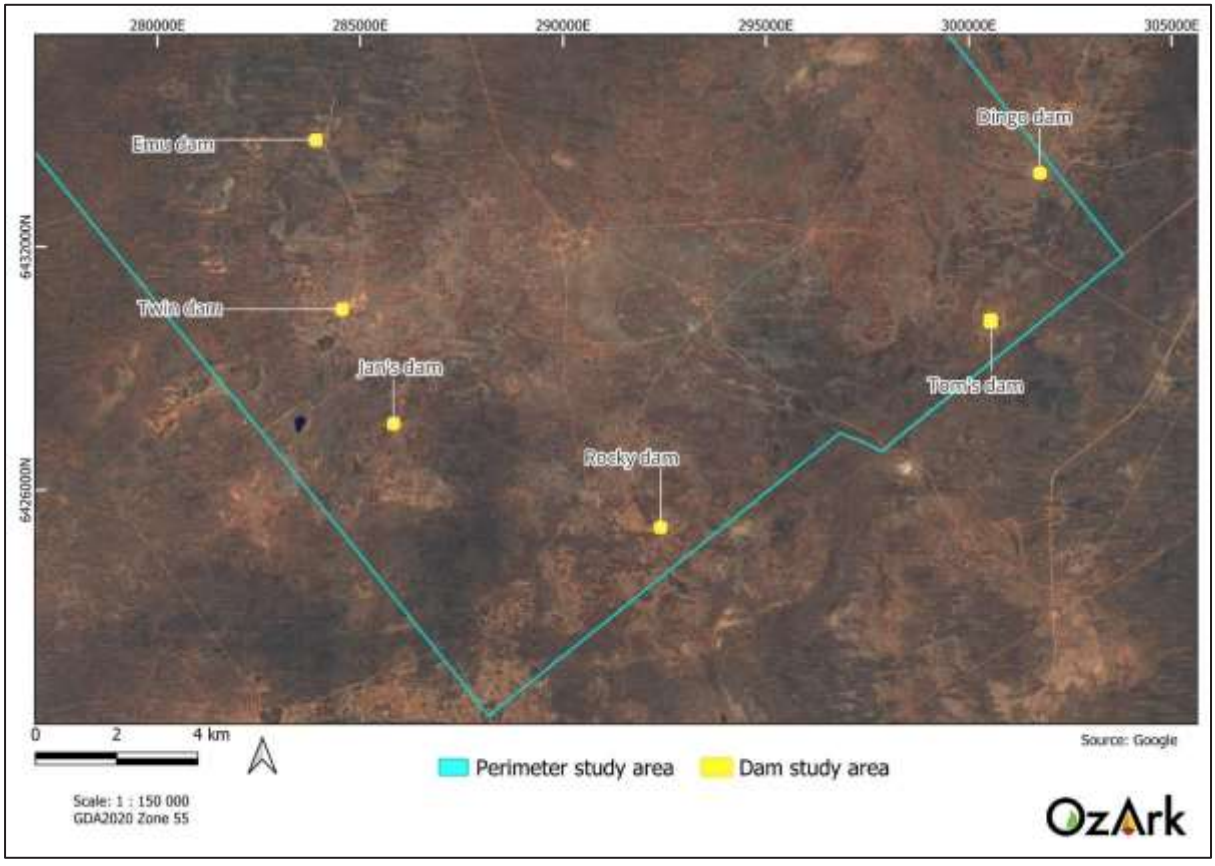


Figure 5: Southern portions of the study area.



7. Reasons for the activity and consideration of alternatives

7.1 Objectives and reasons for the proposal

The objectives of the proposal are to:

- clear and grade a linear strip adjacent to the perimeter fence to establish a boundary management trail enabling access around the perimeter of the park for fire control and fence maintenance
- provide new perimeter fencing where required in order to minimise the movement of stock and feral goats onto the park, reducing the browsing impacts on the revegetation undertaken in the park and increasing the effectiveness of NPWS' existing feral animal control activities
- reduce the number of available water sources for feral goats by breaking 8 dams, fencing a further 4 dams, and excluding one dam from the park via fencing
- manage the carbon project in accordance with the relevant Farm Management and Permanence Plan (FMPP) and ensure the project continues to meet activity requirements under the Carbon Farming Initiative Act CFI Rule and human-induced regeneration methodology determination
- support carbon sequestration and overall park management goals.

7.2 Consideration of alternatives

Options considered are:

7.2.1 "Do Nothing"

This option fails to improve fire management and reduce the number of feral goats on site.

While NPWS continues to undertake additional feral animal control at Koonaburra under this option, greater numbers of feral goats may continue to inhibit regeneration and impact the biodiversity values at Koonaburra NP.

Failure to manage feral goats on the property in accordance with CFI Act, Rule and method requirements may lead to revocation of the Koonaburra NP carbon project.

NPWS does not have reliable access to the park perimeter to protect the carbon project and neighbouring properties from fire.

7.2.2 Undertake the boundary trail, fencing and dam decommissioning project

This option allows for improved fire management and the active management of the park so as to reduce the impact of the feral goats on the site, supporting the goal of carbon sequestration.

7.3 Justification for preferred option

Option 2 is the preferred option as it meets the objectives of the proposal.

7.4 Site suitability

The site is an existing NPWS park.

The proposal is part located within the following landscapes:

- Murray Darling Depression bioregion (characterised by extensive sandplains, dunefields piled against Cobar Peneplain ranges, freshwater overflow lakes fed by rare floods in the Darling River, and stony ridges and ranges).
- Cobar Peneplain bioregion (characterised by steep ridges and rocky slopes controlled by bedding and joints in bedrock, relief to 150m, length of ranges up to 40 km, undulating low ridges and stony rises on softer rocks with a mantle of Quaternary colluvium and alluvium, sands and minor clay deposits in stream lines).

The site suitability matrix is determined as being largely unmodified.

Strategic site assessment under NPWS Policy is not required due to the nature of the proposal (NSW DCCEW 2011).

8. Description of the existing environment

8.1 Overview of the project area

The regional context of the proposal is provided below in **Table 4**.

Table 4. Regional context for the proposal.

Criterion	Value
Interim Biogeographic Regionalisation for Australia (IBRA Region)	• Murray Darling Depression (proposal site) • Cobar Peneplain (proposal site)
Interim Biogeographic Regionalisation for Australia Sub-region (IBRA Sub-Region)	• Darling Depression (proposal site) • Barnato Downs (proposal site)
State	• NSW
Local Government Area	• Cobar Shire Council
Nearest town	• Ivanhoe
Nearest park, state forest or reserve	• Koonaburra National Park (proposal site) • Paddington Nature Reserve (20 km northwest of proposal site)
Mitchell Landscapes	• Barnato Downs • Barnato Incised Streams • Barnato Wide Valleys • Belarabon Range • Ivanhoe – Nangara Dunes • Ivanhoe – Nangara Linear Dunes • Ivanhoe – Nangara Sandplains • Nymagee Downs • Nymagee Isolated Bedrock Hills
Nearest waterway (Name, Type)	• numerous unnamed minor non-perennial watercourses – within proposal site • Major-perennial watercourse (Sandy Creek) – within proposal site
Surrounding land use	• 1.1.0 Nature Conservation (proposal site) • 1.3.0 Other minimal use (study area) • 2.1.0 Grazing native vegetation (study area) • 5.4.0 Residential and farm infrastructure (proposal site) • 6.2.0 Reservoir/dam (proposal site) • 6.3.0 River (proposal site)
Surrounding land zone	• C1 – National Parks and Nature Reserves (proposal site) • RU1 – Primary Production (study area)

8.2 Natural values

The following information is largely adapted from the Biodiversity Assessment Report (BAR) produced by OzArk (2024) to support this REF.

Please note that the figures within this section have been taken from the BAR, which uses the term “subject site” in reference to the footprint of the proposal and the area directly affected by the development activities (aka Study Area).

8.2.1 Geology, geomorphology and topography

Bioregion

The proposal site falls within the Darling Depression subregion of the Murray Darling Depression bioregion and the Barnato Downs subregion of the Cobar Peneplain bioregion, as per the Interim Biogeographic Regionalisation of Australia (IBRA) (Thackway & Cresswell, 1995). The relevant subregions are characterised by geology, landforms, soil types and vegetation as described in **Table 5** and **Table 6** below, sourced from NPWS (2003). No significant impacts to geology are anticipated due to the low impact of the proposed works (fence construction and dam decommissioning).

Table 5. Description of the Darling Depression subregion

Bioregion	Murray Darling Depression
Subregion	Darling Depression
Geology	Quaternary aeolian sands and lake sediments. Isolated Devonian quartz sandstone outcrops.
Landforms	Extensive sandplains. Dunefields piled against Cobar Peneplain ranges. freshwater overflow lakes fed by rare floods in the Darling River. Stony ridges and ranges.
Soils	Deep siliceous and calcareous red to yellow sands, sandy earths, brown texture contrast soils on dunes and sandplains. Brown and grey and calcareous clays on lakes. Pale yellow sands on lunettes. Stony loams on hills.
Vegetation	Belah, rosewood, nelia, mulga wilga and woody shrubs on western sandplains. Pointed mallee, congoo mallee, yorrell with diverse shrubs and porcupine grass, occasional kurrajong and mallee cypress pine on eastern sandplains. Mulga, white cypress pine, red box, mallee, belah and poplar box on central dunes. Lignum, canegrass, black bluebush and black box or poplar box on margins and beds of swamps and lakes. Mulga with red box and shrubs on rocky hills.

Table 6. Description of the Barnato Downs subregion

Bioregion	Cobar Peneplain
Subregion	Barnato Downs
Geology	Devonian quartzose sandstones in ridges, finer sedimentary rocks under the plains often covered by a mantle of Quaternary alluvium.
Landforms	Steep ridges and rocky slopes controlled by bedding and joints in bedrock. Relief to 150m, length of ranges up to 40 km. Undulating low ridges and stony rises on softer rocks with a mantle of Quaternary colluvium and alluvium. Sands and minor clay deposits in stream lines. Lakes at Barnato.

Bioregion	Cobar Peneplain
Soils	Thin, discontinuous stony profiles on ridges, thickening downslope to stony, red, texture contrast soils and red earths on the plains. Valleys generally texture contrast soils with calcium carbonate in subsoil, small areas of cracking brown clays or red sands.
Vegetation	Mulga, red box and grey mallee on crests, white cypress pine and poplar box on slopes. Red box, mulga, white cypress pine and polar box on plains. Areas of belah rosewood and yarran. Pointed mallee in the south. Woody shrubs widespread.

The landscapes of NSW, previously known as Mitchell Landscapes, were mapped in 2002 to provide a framework for reporting and for determining over-cleared landscapes (Mitchell, 2002). These landscapes broadly describe areas of similar topography, geology, soils and vegetation. The subject site falls within the following landscapes:

- Barnato Incised Streams,
- Barnato Downs,
- Barnato Wide Valleys,
- Belarabon Range,
- Ivanhoe – Nangara Dunes,
- Ivanhoe – Nangara Linear Dunes,
- Ivanhoe – Nangara Sandplains,
- Nymagee Downs, and
- Nymagee Isolated Bedrock Hills.

These landscapes are described below and their location, in relation to the subject site, is shown in **Figure 6**.

Barnato Incised Streams

Barnato Incised Streams ecosystem includes parts of three land systems: Kaleno, Wrightville and Yanda. Major drainage lines with Quaternary alluvium draining north off the Cobar Peneplain. Partly scalded plains with few small drainage sinks, floodplains with stable incised and slightly sinuous channels, slightly terraced tributary drainage lines, small stony or sandy rises, relief to 3m. Reddish texture-contrast soils and red earths on plains, often gravely with some hardpan development. Sandy soils on rises and in creek channel.

Clearing status – 13% of this landscape is estimated to have been cleared.

Barnato Downs

Barnato Downs ecosystem includes parts of six land systems: Boulkra, Cottage, Ironstone, Lilyvale, Taringa and Wilsons Tank. Undulating rounded Devonian quartzite and sandstone ridges with small plateau, footslopes, and narrow and broad drainage flats, relief to 10m, occasionally to 20m. Includes areas of Tertiary silcrete ridges with long low slopes and broad level plains, relief to 20m. Some ridges are partly covered by aeolian sand. Shallow, stony, loamy and sandy soils on crests. Ferruginous red earths on lower slopes and in drainage lines. Deep, calcareous red earths and solonized brown soils with gilgai on plateau, Red earths and red texture-contrast soils on lower slopes, passing to deeper clays with gilgai, texture-contrast soils and solonized brown soils on lower slopes and in drainage lines.

Barnato Wide Valleys

Barnato Wide Valleys ecosystem includes parts of three land systems: Cubba, Meadows and Mulchara. Terraced broad plains with drainage lines of major and minor narrow stable

channels. Isolated sand dunes and sandy rises, relief to 3m. Deep red earths, calcareous red earths and poorly structured texture-contrast soils on plains, with texture-contrast soils on lower terraces and non-cracking clays in some channels. Sands on dunes and creek levees.

Clearing status – 7% of this landscape is estimated to have been cleared.

Belarabon Range

Belarabon Range ecosystem includes parts of two land systems: Booroondarra and Mulga Downs. Low bevelled and rounded strike ridges and footslopes, rocky cliffs of Devonian quartzite, sandstone, conglomerate and shale with narrow alluvial valleys, relief to 200m. Shallow, sandy lithosols becoming deeper and better developed down slope, narrow valleys of red earths, incised drainage tracts with bare rock or sandy creek beds and levees.

Clearing status – 0% of this landscape is estimated to have been cleared.

Ivanhoe – Nangara Dunes

Ivanhoe-Nangara Dunes ecosystem includes parts of three land systems: Gundigoono, Keewong and Mandleman. Low rounded dunes of Quaternary sand with small level areas, drainage sinks and lunettes, relief to 10m. Dunefield of parabolic and unaligned dunes merging into slightly undulating sandplains, relief to 7m. Dunes oriented both east-west and north-south with red sandy earths and solonized brown soils. Swales of calcareous red earths and solonized brown soils. Sinks and swamps on calcareous red earths and non-cracking clays with dense bimble box.

Clearing status – 2% of this landscape is estimated to have been cleared.

Ivanhoe – Nangara Linear Dunes

Ivanhoe-Nangara Linear Dunes ecosystem includes parts of eight land systems: Arumpo, Bell Vale, Blackfella, Bulla Park, Cairo, Glenlea, Lachlan Downs and Tiltagoona. Parallel east-west trending dunes of Quaternary sands with narrow to broad swales and sandplain, small depressions and channels, relief 3 to 10m. Eastern margins low sloping sandplains with some dunes, abutting and partly overlying ranges and hills, relief to 20m. Deep calcareous red earths, loamy sand to red siliceous sand. Deep clayey sands, sandy earths, reddish-brown clay soils, red texture-contrast soils in swales and on sandplains. Solonized brown clay soils in sinks and channels.

Clearing status – 1% of this landscape is estimated to have been cleared.

Ivanhoe – Nangara Sandplains

Ivanhoe-Nangara Sandplains ecosystem includes parts of nineteen land systems: Ashmont, Bindi, Coonavitra, Frenchmans, Hatfield, Karwarn, Lysmoyle, Manara, Mulururu, Nangara, Nelgadale, Nelia, Nombinnie, Overnewton, Roto, Vidale, Wilkurra, Wyloona and Yallock. Extensive, slightly undulating, partially scalded sandplains of Quaternary alluvial and aeolian deposits with a few east-west dunes, isolated small depressions and small drainage sinks. Includes aeolian sand accumulation on range footslopes, relief 3 to 10m. Solonized brown soils and texture-contrast soils on the plains. Deep calcareous red earths, red clayey sands, sandy earths, and red and brown sands on dunes. Swales with deep calcareous red earths and red texture-contrast soils. Non-cracking brown and grey clays in depressions.

Clearing status – 3% of this landscape is estimated to have been cleared.

Nymagee Downs

Nymagee Downs ecosystem includes parts of eleven land systems: Boulkra, Cobar, Cottage, Hartwood, Ironstone, Killala, Kopyje, Lilyvale, Taringa and Yackerboon. Undulating rounded Ordovician, Silurian or Devonian quartzite, sandstone or phyllite ridges with narrow and broad drainage flats, relief 10 to 20m. Undulating silcrete ridges with long low slopes and broad level plains, relief to 20m. Drainage lines up to 1 km wide. Shallow, stony, loamy and sandy soils on crests, deep, calcareous red earths and solonized brown soils with gilgai on plateau, grading to deeper acid, neutral or calcareous red earths and red texture-contrast soils with hardpan down slope.

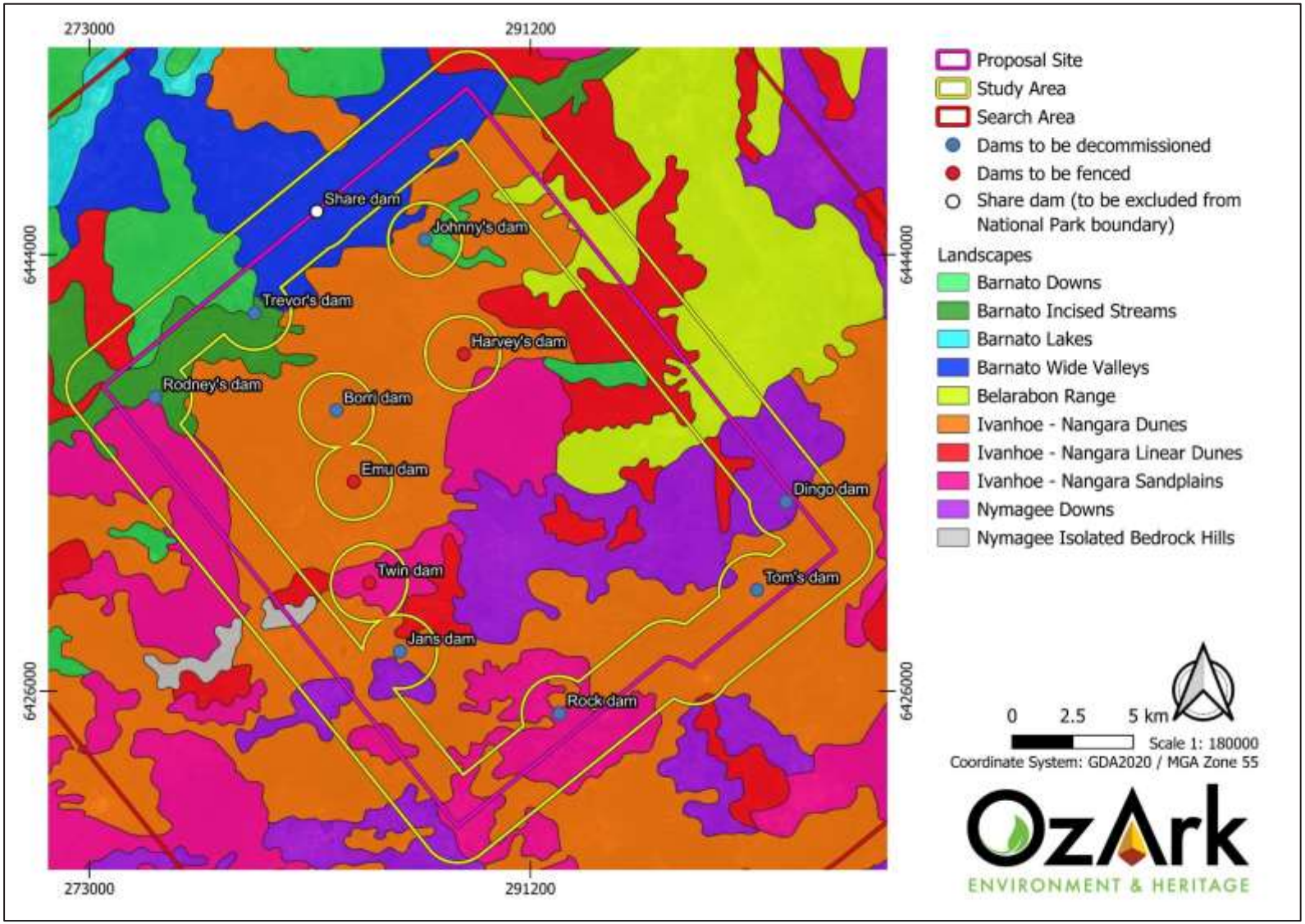
Clearing status – 35% of this landscape is estimated to have been cleared.

Nymagee Isolated Bedrock Hills

Nymagee Isolated Bedrock Hills ecosystem includes parts of five land systems; Belford, Booroondarra, Mineshaft, Mulga Downs and Wynwood. Isolated rounded hills, low strike ridges and rocky cliffs with associated drainage lines and lower slopes of Ordovician, Silurian or Devonian quartzite, sandstone, conglomerate, quartz-feldspar porphyry, phyllite, slate and schist. Relief 20 to 70m. Rocky outcrops, sandy lithosols becoming deeper and better developed down slope, narrow valleys of red earths, incised drainage tracts with bare rock or sand.

Clearing status – 10% of this landscape is estimated to have been cleared.

Figure 6. NSW landscapes within the REF Study Area



8.2.2 Soil types and properties (including contamination)

Soil types are provided in **Table 5** and **Table 6** above. No signficant impacts to soils are anticipated due to the low impact of the proposed works (fence construction and dam decommissioning).

Searches of the EPA's 'List of NSW contaminated sites notified to EPA' and Contaminated Land Record Register, undertaken on 25 October 2024, did not identify any contaminated sites within or nearby the proposal site. However, some sections of the proposal site occur within a disturbed environment (historic vegetation clearing is evident along the fence boundary) and previous use may result in unknown areas of contamination.

8.2.3 Watercourses, waterbodies and their catchments

Watercourses

Six natural watercourses occur within the proposal site (**Figure 7**):

- One unnamed Strahler 1st order, minor, on-perennial watercourse,
- Three unnamed Strahler 2nd order, minor, on-perennial watercourses,
- One unnamed Strahler 3rd order, minor, on-perennial watercourse, and
- Sandy Creek (>4th order, major, perennial watercourse).

Furthermore, various minor drainage lines flow into the man-made dams inside the national park boundary.

Although publicly available mapping does not identify Sandy Creek as Key Fish Habitat, the DPIRD Fisheries has advised that it expects the creek to be treated as KFH. As such, KFH occurs within the proposal site. However, no Protected Riparian Land (PRL), as recognised by the NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) occurs within the 10 km search area. Furthermore, no threatened fish species are mapped as potentially occurring within the 10 km search area.

Groundwater dependent ecosystems

The probable vegetation Groundwater dependent ecosystem (GDE) mapping for the Western Murray Darling Basin region (NSW DCCEEW 2025) identified areas of high potential GDEs within the proposal site and study area (**Figure 8**). Although the proposal may involve interaction with groundwater, due to the decommissioning of eight man-made dams, the potential for adverse interaction to ecosystems is considered to be low. As such, no significant impacts to GDEs are expected to result from this proposal.

Rainfall

An average of 276.5 mm of rainfall is recorded annually within the region, with no distinctive wet/dry season (**Figure 9**). November has the highest mean of 30.2 mm, followed by June (29.5 mm) and March (25.9 mm). The lowest mean rainfall occurs in July (17.8 mm), followed by December (18.4 mm) and October (18.6 mm) (BOM 2024; **Figure 9**). Considering the above, the region is unlikely to experience high rainfall events which would impact the proposed works. Potential impacts can be appropriately managed by monitoring the weather and water levels of watercourses, and storing equipment, materials and stockpiles away from drainage lines and areas that may be prone to flooding (e.g., low-lying areas).

Figure 7. Watercourses within the REF Study Area

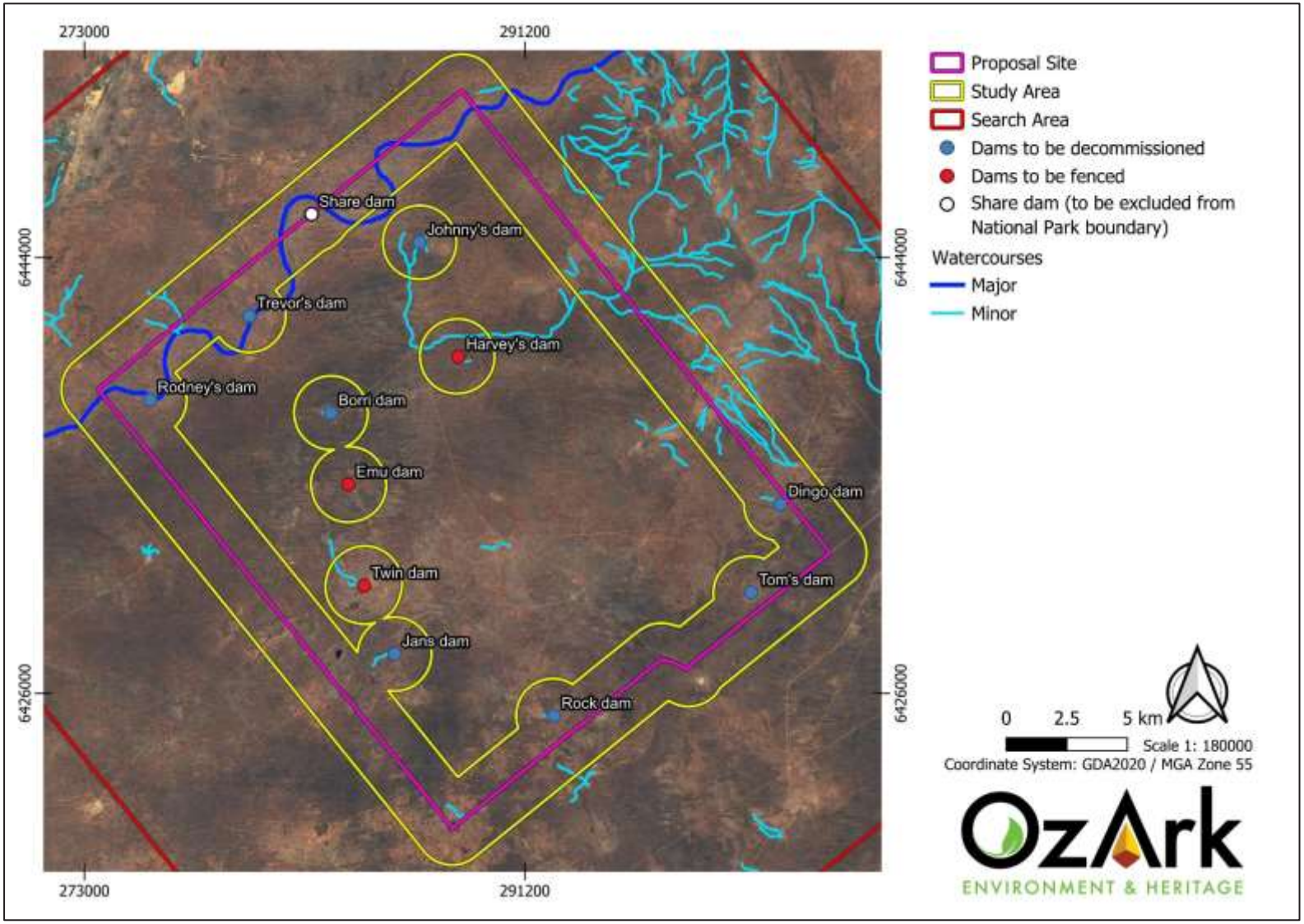


Figure 8. Groundwater dependent ecosystems (GDE) within the REF Study Area

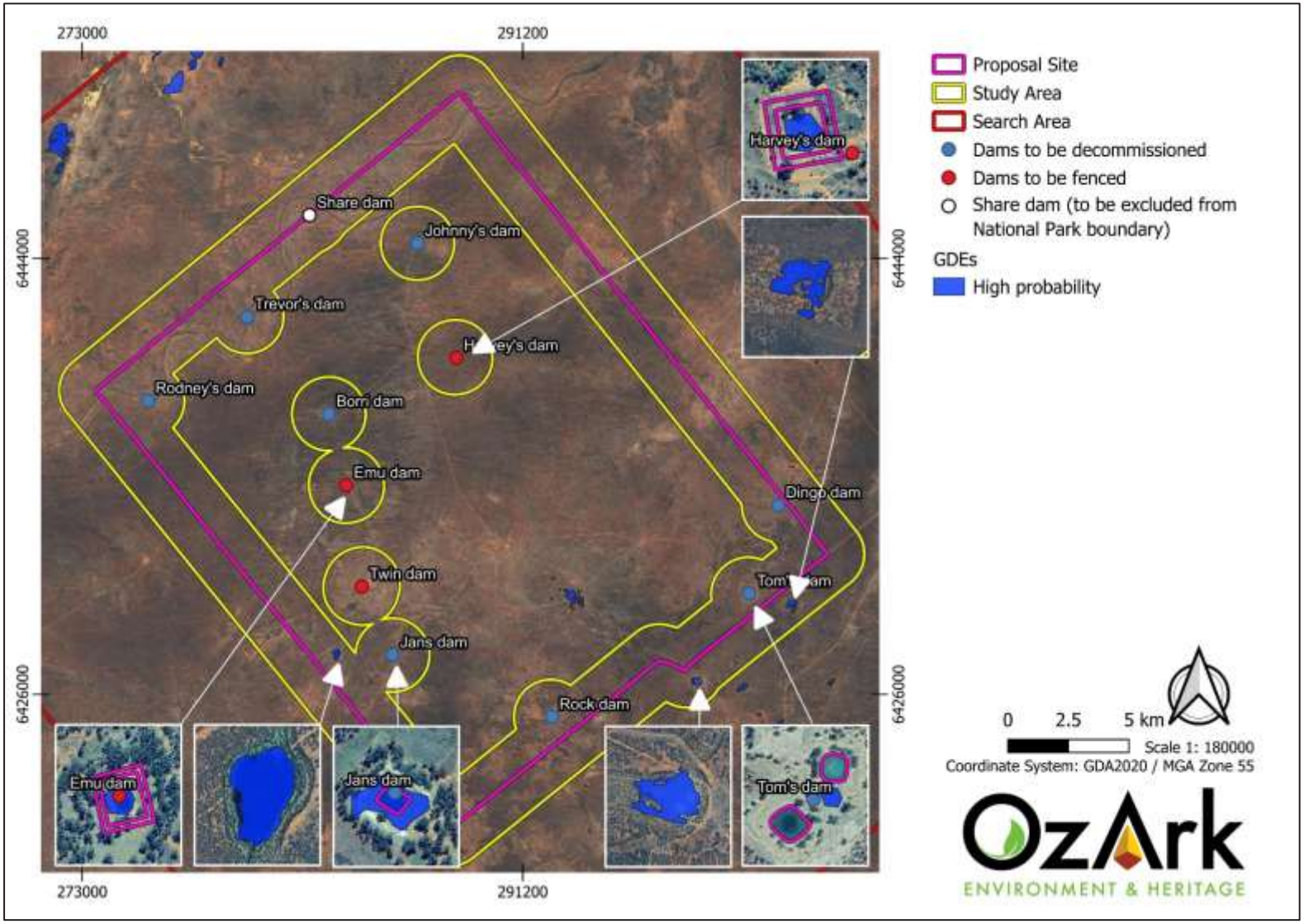
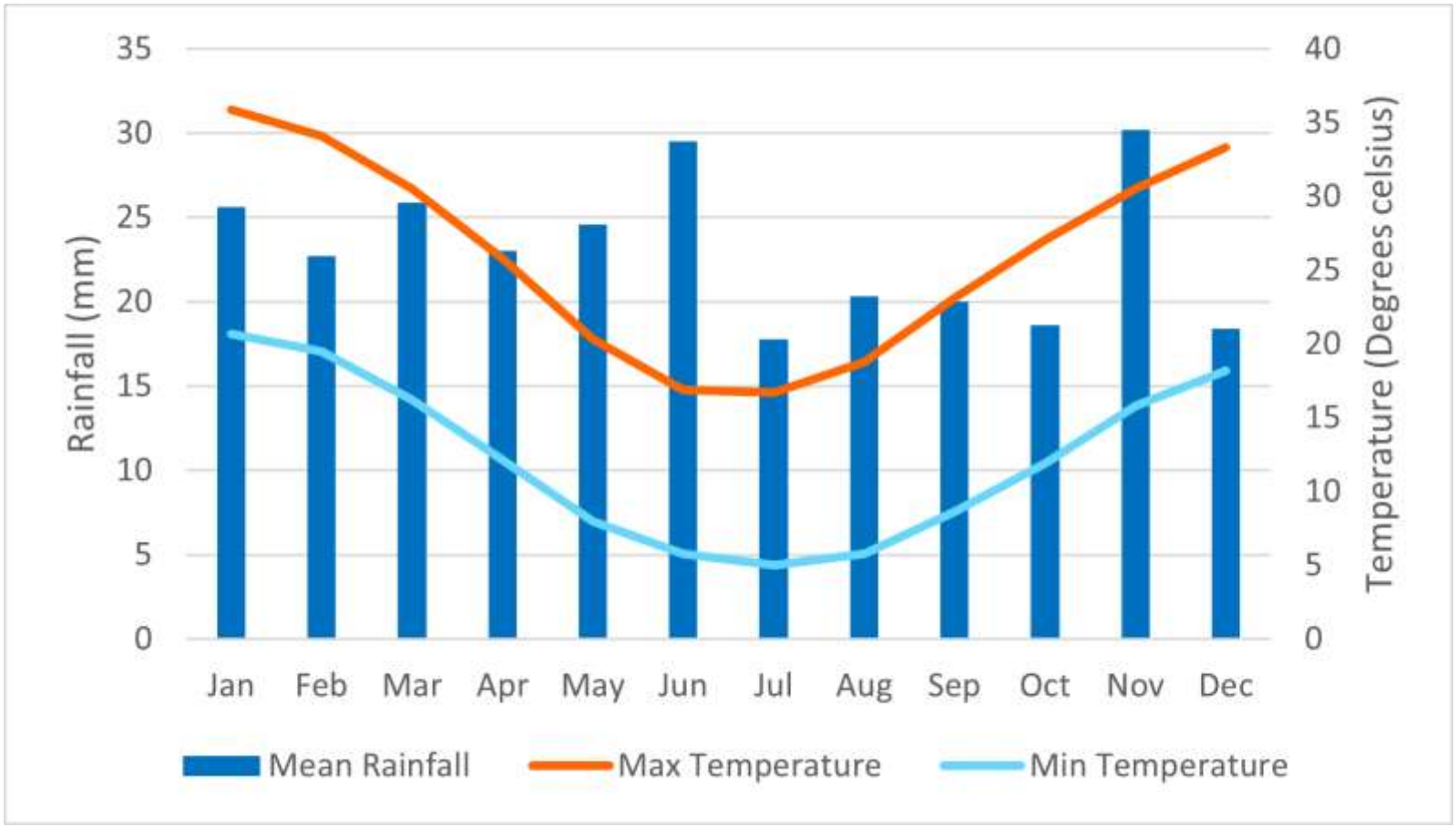


Figure 9. Climate data for Ivanhoe Aerodrome AWS (station number: 049000)



8.2.4 Coasts and estuaries

N/A

8.2.5 Biodiversity

Overview of terrestrial and aquatic biodiversity

In total, 129 plant species were detected during the 12th – 18th of August 2024 field survey. Of this number, 108 (83.72%) are native and 21 (16.28%) are introduced. Four of the introduced species are listed as high-threat exotic species (HTE) under the BAM, one of which – African Boxthorn (*Lycium ferocissimum*) – is also considered a Weed of National Significance (WoNS) and a Priority Weeds (PW) for the Western Local Land Services (LLS) region. No threatened species were detected.

Computer modelling, through the application of the NSW State Vegetation Type Map: C1.1.M1.1, predicted 25 Plant Community Types (PCTs) within the study area:

- PCT 15 - Black Box open woodland wetland with chenopod understorey mainly on the outer floodplains in south-western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion),
- PCT 24 - Canegrass swamp tall grassland wetland of drainage depressions, lakes and pans of the inland plains,
- PCT 39 - Coolabah - River Coobah - Lignum woodland wetland of frequently flooded floodplains mainly in the Darling Riverine Plains Bioregion,
- PCT 40 - Coolabah open woodland wetland with chenopod/grassy ground cover on grey and brown clay floodplains,
- PCT 57 - Belah/Black Oak - Western Rosewood - Wilga woodland of central NSW including the Cobar Peneplain Bioregion,
- PCT 58 - Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion,
- PCT 68 - White Cypress Pine - Mulga low open woodland on the stony ranges of the arid zone (far north western NSW),
- PCT 72 - White Cypress Pine - Poplar Box woodland on footslopes and peneplains mainly in the Cobar Peneplain Bioregion,
- PCT 103 - Poplar Box - Gum Coolabah - White Cypress Pine shrubby woodland mainly in the Cobar Peneplain Bioregion,
- PCT 105 - Poplar Box grassy woodland on flats mainly in the Cobar Peneplain Bioregion and Murray Darling Depression Bioregion,
- PCT 106 - White Cypress Pine - Mulga low woodland on siliceous rocky ranges mainly of the Cobar Peneplain Bioregion,
- PCT 108 - Gum Coolabah - Mulga open woodland on gravel ridges of the Cobar Peneplain Bioregion,
- PCT 125 - Mulga - Ironwood shrubland on loams and clays mainly of the Cobar Peneplain Bioregion,
- PCT 128 - Nelia tall open shrubland of semi-arid sandplains,
- PCT 134 - Ironwood woodland of the semi-arid plains,
- PCT 143 - Narrow-leaved Hopbush - Scrub Turpentine - Senna shrubland on semi-arid and arid sandplains and dunes,

- PCT 170 - Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones,
- PCT 171 - Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion,
- PCT 172 - Deep sand mallee of irregular dunefields of the semi-arid (warm) zone,
- PCT 173 - Sandplain mallee of central NSW,
- PCT 174 - Mallee - Gum Coolabah woodland on red earth flats of the eastern Cobar Peneplain Bioregion,
- PCT 207 - Poplar Box grassy low woodland of drainage lines and depressions of the semi-arid (hot) and arid zone climate zones,
- PCT 218 - Grey Mallee - Mulga shrubland of the north-western Cobar Peneplain Bioregion,
- PCT 233 - River Red Gum - Poplar Box grassy woodland wetland on Quaternary alluvial sandy-loam soils of the Cobar Peneplain, and
- PCT 631 - White Cypress Pine - Western Rosewood - spinifex grass open woodland on sand-dunes in the Murray Darling Depression Bioregion.

Field survey results found the Regional Scale State Vegetation Mapping to be partially accurate, with ten of the predicted PCTs (57, 72, 103, 105, 108, 143, 171, 173, 174, and 207) found to occur within the proposal site. A further four PCTs, which were not predictively mapped to the study area, were also identified within the proposal site:

- PCT 104 - Gum Coolabah woodland on sedimentary substrates mainly in the Cobar Peneplain Bioregion,
- PCT 119 - Sandplain Mulga tall shrubland - open shrubland of the semi-arid and arid climate zones,
- PCT 229 - Derived mixed shrubland on loamy-clay soils in the Cobar Peneplain Bioregion, and
- PCT 245 - Pine - Belah low open woodland of the western Cobar Peneplain and northern Murray Darling Depression Bioregion.

PCT mapping has been provided in digital format to NPWS. A list of all flora species encountered during the field survey and representative photographs of each PCT are provided in **Appendix B** of the BAR.

As noted in **section 8.2.3** of this REF, there are six natural watercourses within the proposal site (**Figure 7**). No areas of KFH occur within 70 km of the proposal site. Furthermore, no mapped distributions of threatened fish species occur within the proposal site.

Areas of outstanding biodiversity value or critical habitat

There are no areas of outstanding biodiversity or critical habitat within the proposal site.

Environmental assets of intergenerational significance (AIS)

The NPWS register of Assets of Intergenerational Significance Interactive Map (NPWS 2025) shows that the site is not declared as an asset of intergenerational significance.

Threatened ecological communities

According to the BioNet Vegetation Classification Database, 7 PCTs within the impact area (57, 119, 143, 171, 173, 174, and 229) are associated with Threatened Ecological Community (TEC) listings. No areas of these PCTs within the proposal site meet the criteria to be considered a TEC. However, a further PCT (245), which is not recognised as being

associated with a TEC on the BioNet Vegetation Classification Database, was nevertheless found to meet criteria to be considered a TEC. As such, up to 0.94 ha of the BC Act-listed EEC – *Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions* – would be impacted by the proposal.

TEC determinations and area calculations for both BC and EPBC-Act listed TECs are provided in **Table 7** and **Table 8**, respectively. Locations of recorded TECs within the proposal site can be seen in **Figure 10**. A BC Act 5-part test of significance was conducted in the BAR. Provided that mitigation measures outlined in **Section 7** of the BAR are adhered to, the proposal is unlikely to have a significant impact on the BC Act-listed EEC – *Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions*.

The proposal site is also located within the bounds of the aquatic EEC: Lowland Darling River aquatic ecological community (DPI 2007; **Figure 11**). The aquatic ecological community of the lowland Darling River includes all native fish and aquatic invertebrates within all natural creeks, rivers, streams and associated lagoons, billabongs, lakes, anabranches, flow diversions to anabranches and floodplains of the Darling River within NSW. The listing includes:

- the Menindee Lakes,
- the Barwon River,
- the main Barwon-Darling channel from Mungindi (Qld-NSW border) to the convergence with the Murray River,
- the arid zone intermittent intersection streams (Warrego, Culgoa, and Narran rivers),
- the border rivers (Macintyre, Severn and Dumaresq rivers), and
- the regulated tributaries (Gwydir, Namoi, Macquarie, Castlereagh, and Bogan rivers).

The proposal site crosses Sandy Creek (a tributary of the Bogan River). As such, the Lowland Darling River aquatic ecological community occurs within the proposal site. However, considering eight water flow barriers (dams) will be removed, and no new trails will be constructed across Sandy Creek, the proposal would not significantly impact this aquatic TEC. Conversely, the removal of eight water flow barriers may have a positive impact on the aquatic EEC by allowing a greater volume of water to flow across the landscape unimpeded.

Table 7. A check of BC Act-listed TECs potentially associated with PCTs within the Proposal site

PCT ID	BC Act-listed TEC Associations	Proposal site Fits the TEC?	Area (ha) in Proposal site
57	EEC: *Acacia loderi* shrublands	**No.** *Acacia loderi* was not recorded within the proposal site.	-
119	EEC: *Acacia loderi* shrublands	**No.** *Acacia loderi* was not recorded within the proposal site.	-
143	EEC: *Acacia loderi* shrublands	**No.** *Acacia loderi* was not recorded within the proposal site.	-
173	EEC: *Acacia loderi* shrublands EEC: *Acacia melvillei* Shrubland in the Riverina and Murray-Darling Depression bioregions	**No.** *Acacia loderi* was not recorded within the proposal site. **No.** *Acacia melvillei* was not recorded within the proposal site.	-
174	EEC: *Acacia loderi* shrublands	**No.** *Acacia loderi* was not recorded within the proposal site.	-
229	EEC: *Acacia loderi* shrublands	**No.** *Acacia loderi* was not recorded within the proposal site.	-
245	EEC: Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions	**Yes.** The White pine dominated woodlands within the Murray-Darling Depression bioregion has the correct species assemblage for listing as this TEC.	0.94

Table 8. A check of EPBC Act-listed TECs potentially associated with PCTs within the Proposal site

PCT ID	EPBC Act-listed TEC Associations	Proposal site Fits the TEC?	Area (ha) in Proposal site
171	EEC: Mallee Bird Community of the Murray Darling Depression Bioregion	**No.** The proposal site lacked the assemblage of bird species required for listing.	-
173	EEC: Mallee Bird Community of the Murray Darling Depression Bioregion CEEC - Plains mallee box woodlands of the Murray Darling Depression, Riverina and Naracoorte Coastal Plain Bioregions	**No.** The proposal site lacked the assemblage of bird species required for listing. **No.** The proposal site lacked *Eucalyptus porosa* (Black Mallee Box) or *E. behriana* (Bull Mallee), and is outside of the known range of this TEC	-
174	EEC: Mallee Bird Community of the Murray Darling Depression Bioregion	**No.** The proposal site lacked the assemblage of bird species required for listing.	-

Figure 10. Threatened Ecological Communities within the REF Study Area

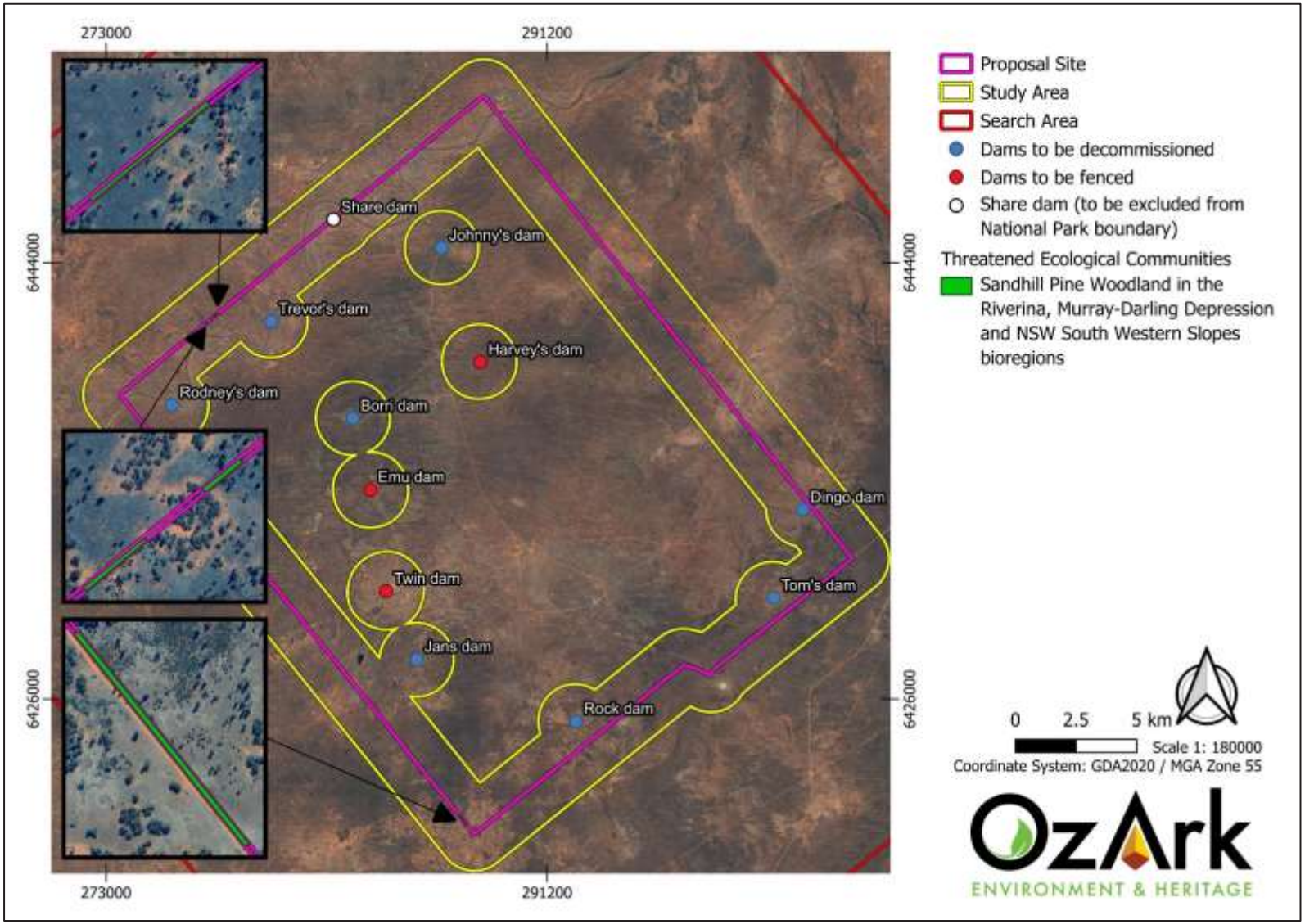
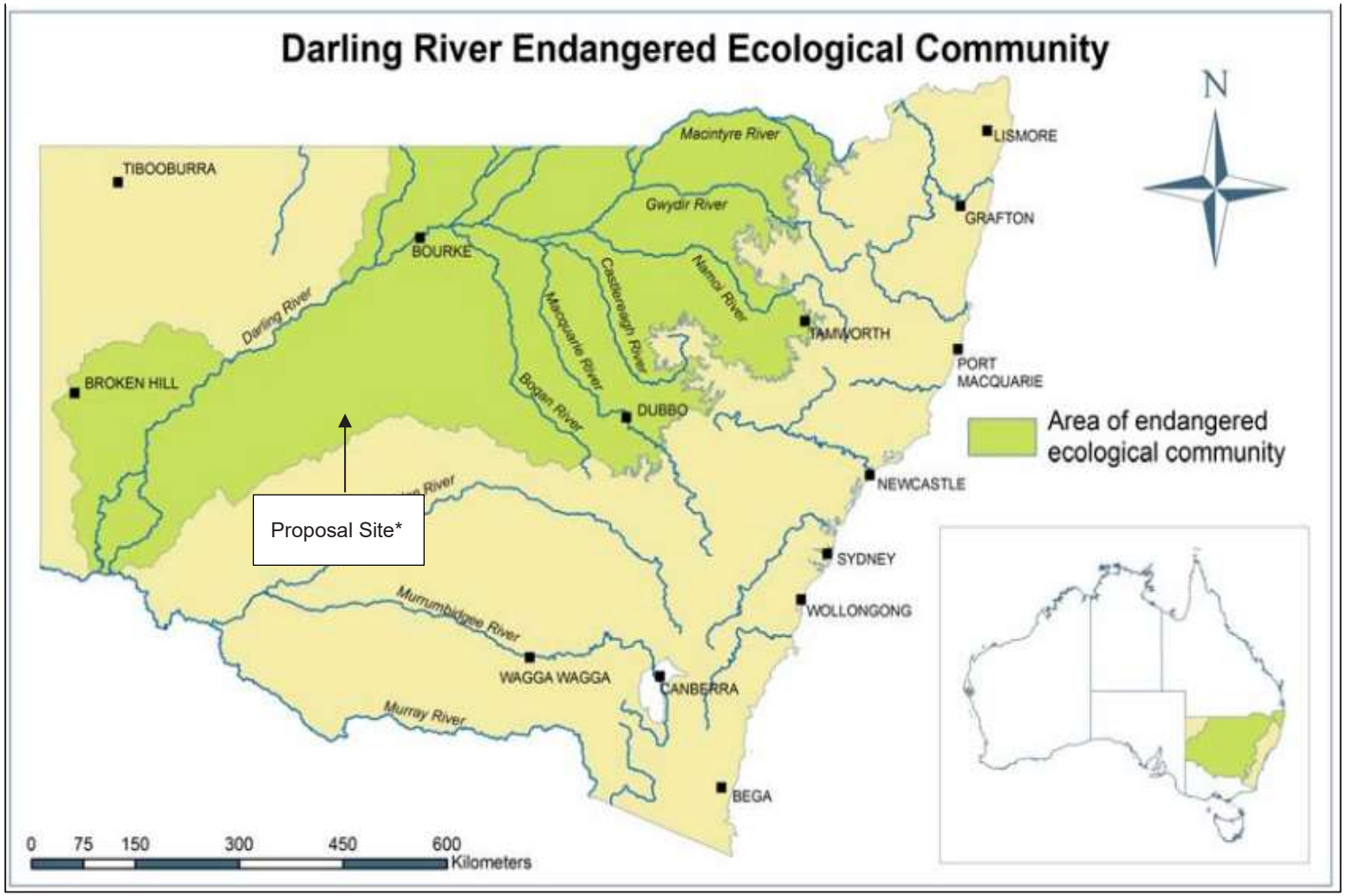


Figure 11. Map of the Darling River Endangered Ecological Community



*Approximate location

Source: DPI (2007)

Threatened species and populations

A desktop review of ecological databases, information and mapping was undertaken to identify potential biodiversity values associated with the proposal site and surrounds. This included ecological database searches to identify threatened species, populations or ecological communities listed in the EPBC Act, BC Act and/or FM Act known or predicted to occur within 10 km of the proposal site. The field survey was completed by Senior Ecologist Crystal Graham and Ecologist Ian Griffith between 12 August and 18 August 2024. This included flora and fauna surveys and habitat assessments. It targeted threatened flora and fauna identified as potentially occurring in the region. The field survey aimed to:

1. Identify flora and fauna species and vegetation communities present.
2. Describe the quality and value of the vegetation and the flora and fauna habitat within the proposal site.
3. Determine if threatened species, populations or ecological communities listed under the EPBC Act, BC Act and/or FM Act occur, or are likely to occur, within the proposal site.
4. Inform the biodiversity impact assessment.

The assessment methodology is described in detail in the BAR.

The review of the Threatened Species Profiles database found that 103 threatened flora and fauna species, listed under the BC and/or the EPBC Act, are known or predicted to occur within the Darling Depression subregion of the Murray Darling Depression Bioregion, and the Barnato Downs subregion of the Cobar Peneplain Bioregion. Based on the proximity of past records, habitat requirements, and the results of the field survey, 62 threatened or migratory species were assessed as having a moderate-high likelihood of occurring within the proposal site (**Table 9**); tests of significance have been conducted for these species in the BAR (BAR **Appendices D – E**).

In total 129 flora species were observed during the field survey. Of these, 108 (83.72%) are native and 21 (16.28%) are introduced. No threatened species were detected.

Seventy-four fauna species (71 native and 3 introduced) were detected during the 12th – 18th of August 2024 field survey. Two frogs, 56 birds, 11 mammals, and five reptiles were detected.

Four threatened bird species and one threatened bat species were detected during the field survey:

- Southern Whiteface (*Aphelocephala leucopsis*) – Vulnerable under the BC and EPBC Acts.
- Pink Cockatoo (*Lophochroa leadbeateri*) – Vulnerable under the BC Act and Endangered under the EPBC Act.
- Hooded Robin south-eastern form (*Melanodryas cucullata cucullate*) - Endangered under the BC and EPBC Acts.
- Grey-crowned Babbler eastern subspecies (*Pomatostomus temporalis temporalis*) – Vulnerable under the BC Act.
- Little Pied Bat (*Chalinolobus picatus*) - Vulnerable under the BC Act.

One species listed as marine under the EPBC Act was also detected:

- Horsfield's Bronze Cuckoo (*Chrysococcyx basalis*)

Tests of significance were conducted for all species listed under the BC and EPBC Act, with a moderate-high likelihood of occurring within the proposal site. The results of these tests concluded that provided the recommended mitigation measures are employed, the proposal

would not have a significant negative impact on biodiversity, including any threatened species, population, ecological community or migratory species (BAR **Appendices D – E**).

Table 9. BC and/or EPBC Act-listed threatened and/or migratory species with a moderate-high likelihood of occurring within the proposal site

Class	Scientific name	Common name	NSW status*	Comm. status+	Records < 10 km-
Amphibia	*Crinia sloanei*	Sloane's Froglet	E1,P	E	0
Aves	*Amytornis striatus striatus*	Mukarrthippi Grasswren	E4A,P	CE	0
Aves	*Aphelocephala leucopsis*	Southern Whiteface	V,P	V	2
Aves	*Ardeotis australis*	Australian Bustard	E1,P		0
Aves	*Artamus cyanopterus cyanopterus*	Dusky Woodswallow	V,P		0
Aves	*Burhinus grallarius*	Bush Stone-curlew	E1,P		0
Aves	*Calyptorhynchus banksii samueli*	Red-tailed Black-Cockatoo (inland subspecies)	V,P,2		0
Aves	*Certhionyx variegatus*	Pied Honeyeater	V,P		0
Aves	*Chthonicola sagittata*	Speckled Warbler	V,P		0
Aves	*Cinclosoma castanotum*	Chestnut Quail-thrush	V,P		0
Aves	*Circus assimilis*	Spotted Harrier	V,P		0
Aves	*Daphoenositta chrysoptera*	Varied Sittella	V,P		0
Aves	*Drymodes brunneopygia*	Southern Scrub-robin	V,P		0
Aves	*Epthianura albifrons*	White-fronted Chat	V,P		0
Aves	*Falco hypoleucos*	Grey Falcon	V,P,2	V	0
Aves	*Falco subniger*	Black Falcon	V,P		0
Aves	*Grantiella picta*	Painted Honeyeater	V,P	V	0
Aves	*Grus rubicunda*	Brolga	V,P		0
Aves	*Haliaeetus leucogaster*	White-bellied Sea-Eagle	V,P		0
Aves	*Hamirostra melanosternon*	Black-breasted Buzzard	V,P,3		0
Aves	*Hieraaetus morphnoides*	Little Eagle	V,P		0
Aves	*Hirundapus caudacutus*	White-throated Needletail	V,P	V,C,J,K	0
Aves	*Hylacola cautus*	Shy Heathwren	V,P		0
Aves	*Lathamus discolor*	Swift Parrot	E1,P	CE	0
Aves	*Leipoa ocellata*	Malleefowl	E1,P	V	2
Aves	*Lophochroa leadbeateri*	Pink Cockatoo	V,P,2	E	3
Aves	*Lophoictinia isura*	Square-tailed Kite	V,P,3		0

Class	Scientific name	Common name	NSW status*	Comm. status+	Records < 10 km-
Aves	*Melanodryas cucullata cucullata*	South-eastern Hooded Robin	E1,P	E	0
Aves	*Melithreptus gularis gularis*	Black-chinned Honeyeater (eastern subspecies)	V,P		0
Aves	*Neophema pulchella*	Turquoise Parrot	V,P,3		0
Aves	*Pachycephala inornata*	Gilbert's Whistler	V,P		0
Aves	*Pachycephala rufogularis*	Red-lored Whistler	E4A,P	V	0
Aves	*Polytelis swainsonii*	Superb Parrot	V,P,3	V	0
Aves	*Pomatostomus halli*	Hall's Babbler	V,P		0
Aves	*Pomatostomus temporalis temporalis*	Grey-crowned Babbler (eastern subspecies)	V,P		1
Aves	*Stagonopleura guttata*	Diamond Firetail	V,P	V	0
Aves	*Tyto novaehollandiae*	Masked Owl	V,P,3		0
Flora	*Acacia curranii*	Curly-bark Wattle	V	V	0
Flora	*Atriplex infrequens*	A saltbush	V	V	0
Flora	*Austrostipa metatoris*	A spear-grass	V	V	0
Flora	*Dodonaea sinuolata subsp. acrodentata*	A Hopbush	E1		0
Reptilia	*Eleocharis obicis*	Spike-Rush	V	V	0
Flora	*Goodenia occidentalis*	Western Goodenia	E1		0
Flora	*Grevillea ilicifolia subsp. ilicifolia*	Holly-leaf Grevillea	E4A		0
Flora	*Lepidium monoplocoides*	Winged Peppercress	E1	E	0
Flora	*Pterostylis cobarensis*	Greenhood Orchid	V,P,2		0
Mammalia	*Antechinomys laniger*	Kultarr	E1,P		0
Mammalia	*Chalinolobus picatus*	Little Pied Bat	V,P		1
Mammalia	*Ningaui yvonneae*	Southern Ningaui	V,P		0
Mammalia	*Nyctophilus corbeni*	Corben's Long-eared Bat	V,P	V	2
Mammalia	*Phascolarctos cinereus*	Koala	E1,P	E	0
Mammalia	*Saccolaimus flaviventris*	Yellow-bellied Sheathtail-bat	V,P		0
Mammalia	*Setirostris eleryi*	Bristle-faced Free-tailed Bat	E1,P		0
Mammalia	*Sminthopsis macroura*	Stripe-faced Dunnart	V,P		0
Mammalia	*Vespadelus baverstocki*	Inland Forest Bat	V,P		2
Reptilia	*Antaresia stimsoni*	Stimson's Python	V,P		0
Reptilia	*Delma australis*	Marble-faced Delma	E1,P		0

Class	Scientific name	Common name	NSW status*	Comm. status+	Records < 10 km-
Reptilia	*Lerista xanthura*	Yellow-tailed Plain Slider	V,P		0
Reptilia	*Pseudonaja modesta*	Ringed Brown Snake	E1,P		0
Reptilia	*Simoselaps fasciolatus*	Narrow-banded Snake	V,P		0
Reptilia	*Strophurus elderi*	Jewelled Gecko	V,P		0
Reptilia	*Tiliqua occipitalis*	Western Blue-tongued Lizard	V,P		0

***NSW Status:** P=Protected, V=Vulnerable, E1=Endangered, E2=Endangered population, E4=Extinct, E4A=Critically endangered, 2=Category 2 sensitive species, 3=Category 3 sensitive species.

+ Comm. Status: C=CAMBA, J=JAMBA, K=ROKAMBA, CE=Critically endangered, E=Endangered, V=Vulnerable.

Source: OzArk 2025a

In accordance with chapters 3 and 4 of the Biodiversity and Conservation SEPP 2021 (NSW Government 2021), areas of the proposal site which contain a high density of *Eucalyptus populnea* are considered 'potential koala habitat'. However, considering that no evidence of koala habitation was detected during the field survey and no records occur within the 10 km search area, the proposal site does not contain 'core koala habitat'.

8.3 Cultural values

8.3.1 Aboriginal cultural heritage

As Koonaburra is a permanently semi-arid area with limited and ephemeral watercourses, Aboriginal occupation of the landscape would have been reliant on seasonal rainfall and likely occurred in proximity to Sandy Creek and Collins Swamp.

The archaeological survey conducted as part of the Aboriginal Cultural Heritage Assessment for this project recorded twenty-two previously unrecorded Aboriginal sites and a community interest tree. The twenty-two previously unrecorded sites comprise of twelve artefact scatters, six isolated finds, three open camp sites (one with an associated PAD area), and one hearth site. A total of 178 stone artefacts and ten clay hearths were recorded as a result of the heritage survey. The stone artefact types recorded include blades, cores, distal flake fragments, flakes, flaked pieces, grinding dishes, grinding stones, hammer stones, manuports, retouched flakes, and shatter. Flakes are the dominant stone artefact type, contributing to 65.73% (n=117) of all stone artefact types recorded within the study area. Raw materials recorded within the study area include banded chert, basalt, chert, mudstone, quartz, quartzite, sandstone, and silcrete. Silcrete is the dominant raw material, with 75.28% (n=134) of all recorded stone artefacts manufactured from the material.

During the visual inspection, a community interest tree with a southeast facing scar and circumference of 196 centimetres (cm) was identified approximately 45 m northwest of Emu Dam. The scar was determined by RAPs to be of cultural heritage value. The scar does not conform to the accepted characteristics of cultural modification scars and is not considered by OzArk to be an Aboriginal object.

Sandy Creek is of very high cultural value as it marks the boundary between two moieties of the Ngiyampaa peoples, Stone country to the north and Belah (*Casuarina cristata*) country in the south (provided by Phillip Sullivan).

The mallee tree (*Eucalyptus synandra*), which is present in large patches throughout the national park, are of high cultural value as their branches are harvested for the manufacturing of digeridoos. It was noted by the RAPs that areas where mallee trees grow generally make for poor camping sites and as such, sites in areas of dense growth are more likely to reflect transitory behaviours rather than occupation.

The Bimblebox tree (*Eucalyptus populnea*), which is also present within sections of the proposal area, were also identified as being of high social/cultural value as the roots and branches of the tree were modified into long range throwing or spearing weapons used for hunting kangaroos, wallaby's and emu.

The wilga tree (*Geijera parviflora*), present mostly in the south-eastern portion of the proposal area (particularly noticed around Dingo dam), was identified by Phillip Sullivan as a medicine tree used to assist with a variety of ailments (including skin conditions, sickness, fever, etc) and in smoking ceremonies.

No areas of Assets of Intergenerational Significance (AIS) under s153G of NPW Act; nor any Aboriginal places under s 84 of NPW Act, or any places of Aboriginal heritage significance under the local environmental plan.

Ten of the recorded Aboriginal sites will be directly harmed by the proposal and will be the subject of an Aboriginal Heritage Impact Permit (AHIP). Mitigation measures to limit harm to these sites and prevent harm to other recorded Aboriginal sites are included in Section 9 below.

8.3.2 Historic heritage values

Koonaburra NP has historically been utilised for agricultural operations until it was acquired by NSW NPWS and gazetted as a NP in 2021. As a pastoral station, the property was used as a transfer point for feral goats, with many remaining on site and causing degradation to the native flora. Additionally, several dams have been constructed which are now proposed to either be decommissioned or fenced.

None of the identified Aboriginal sites have any known direct relationship to known historical Aboriginal sites (such as missions or massacre sites). The sites do not display evidence of being a 'contact' or 'post-contact' Aboriginal site.

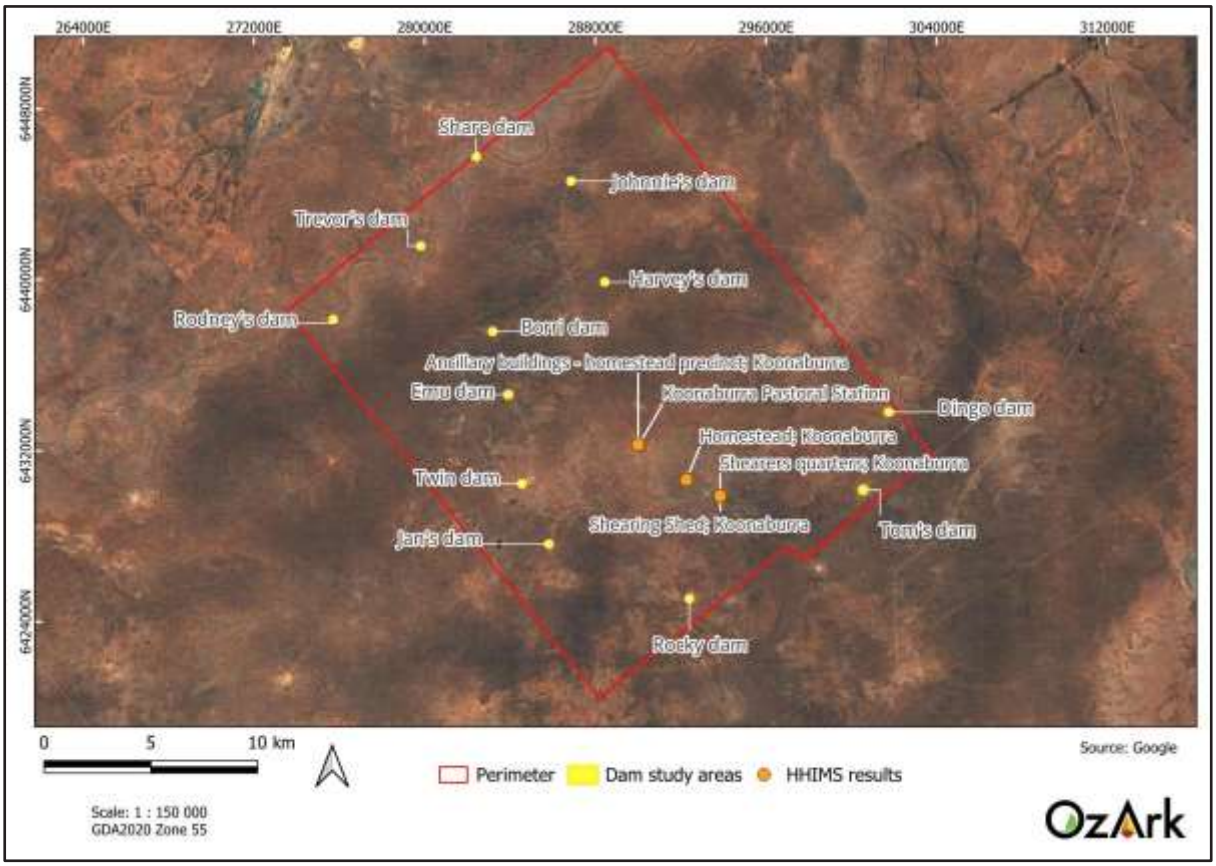
A search of the HHIMS has found 5 listed items as shown in **Table 10** and **Figure 12**.

No items are listed on any other heritage databases or local environmental plan that are in the park.

Table 10. Items listed in NPWS HHIMS in Koonaburra NP

Identification number	Item name	Item type	Item status
3334	Koonaburra Pastoral Station	Complex	Potential
3581	Homestead; Koonaburra	Element	Potential
3582	Shearers quarters; Koonaburra	Element	Potential
3583	Shearing Shed; Koonaburra	Element	Potential
3584	Ancillary buildings - homestead precinct; Koonaburra	Element	Potential

Figure 12: Location of HHIMS listed sites within REF Study Area



8.4 Social values

8.4.1 Recreation values

The major recreational values of the park are associated with the Whispering Oaks campground. The campground was established in late 2022 and provides basic facilities for visitors to the park, including picnic tables, barbecue facilities, carpark, composting toilets and carparking for 6 vehicles. There are no resources such as drinking water, cooking water and firewood provided in the campground.

8.4.2 Scenic and visually significant areas

No specific scenic locations or landscape features are known in the park were disclosed during the Aboriginal Focus Group Meeting (AFGM) held as part of the Aboriginal Cultural Heritage Assessment Report (ACHAR).

No specific scenic values have been identified at Koonaburra NP. The park contains landscape values including sand dunes, big skies and open countryside.

8.4.3 Education and scientific values

As the park has only been recently reserved, opportunities to explore the education and scientific values have been limited. Data captured as part of the Aboriginal and biodiversity assessments will be collated with any existing data to form a base for future educational or scientific opportunities on park.

8.4.4 Interests of external stakeholders

The local Aboriginal community and adjoining landowners are interested in the management of the park, as noted in Section 4 of this REF.

8.5 Matters of national environmental significance

The Biodiversity Assessment Report (BAR) prepared for this project includes an assessment of the potential impacts to Matters of National Environmental Significance and Commonwealth Land. It determined that there was a non-significant impact to any listed threatened species, communities or migratory species as shown in **Table 11**. Results of tests of significance are in Appendix E of the BAR.

Table 11. Impacts to Matters of National Environmental Significance and Commonwealth Land.

Consideration	Potential impact?
Any impact on a listed threatened species or communities?	Yes (non-significant, Appendix E)
Any impacts on listed migratory species?	Yes (non-significant, Appendix E)
Any impacts on a Ramsar wetland of international importance?	No
Any impacts on a Commonwealth marine environment?	No
Any impacts on a World Heritage property?	No
Any impacts on a National Heritage place?	No
Any impacts on the Great Barrier Reef Marine Park?	No
Does the proposal involve a nuclear action (including uranium mining)?	No
Any impact on a water resource, in relation to coal seam gas development and large coal mining development?	No
Additionally, any impact (direct or indirect) on Commonwealth land?	No

9. Impact assessment during all stages of the activity

9.1 Physical and chemical impacts

Is the proposed activity likely to…	Applies?	Impact level	Reasons	Safeguards/mitigation measures
1. impact on soil quality or land stability?	Yes	Low	Minor impact on land stability from the boundary fence trail clearing. During construction, there is potential for loss of soil quality and stability through the removal of vegetation and ground cover along the boundary fence line and decommissioning of ground tanks. Once these areas have been disturbed, and the soil is exposed, the risk of erosion and sedimentation-related issues is increased, although impacts are expected to be minor.	• Provide a staged approach to clearing to reduce impact to land stability. • Works will be undertaken in accordance with the following (where applicable): ○ *Erosion and sediment control on unsealed roads – a field guide for erosion and sediment control maintenance practices on unsealed roads* (OEH 2012) ○ *Managing urban stormwater: soils and construction, volume 1, 4th edition* (Landcom 2004, also known as the 'Blue book') • Where practicable, spread mulch made from vegetation cleared on site on areas of bare soil to stabilise, preventing dust and erosion. • Erosion and sedimentation controls are to be checked and maintained on a regular basis, and not to be removed until the works are complete and areas are stabilised. Regular maintenance includes clearing of sediment from behind barriers and after heavy rainfall events. • Stockpile topsoil removed is to be stored and redistributed across site at completion of construction. • Implement dust suppression activities.
2. affect a waterbody, watercourse, wetland or natural drainage system – either physically or chemically (e.g. due to runoff or pollution)?	Yes	High	The removal of up to 8 dams present on Koonaburra NP will revert the flow regime of the waterways into a more natural sequence. Works which have the potential to generate sediment-laden water runoff include vegetation clearing (along alignment), post hole excavation, access track upgrade (where required)	• Provision of erosion and sediment control measures to reduce potential for sediment slumps during the decommissioning phase. • The design of roads/trails within waterways is to consider controls to minimise the risk of a washout during flood events in accordance with relevant standards including Landcom (2004), OEH (2012) and the RFS Fire trail design, construction and maintenance manual (SCS 2017).

Is the proposed activity likely to…	Applies?	Impact level	Reasons	Safeguards/mitigation measures

			and decommissioning ground tanks. If the works are not designed or constructed properly, there is potential for scouring and erosion to occur within the creek/drainage lines around the proposal sites.
			With safeguards, these potential impacts are expected to be minimised and managed to an appropriate level.
				• Any stockpile and compound sites should be located using the following criteria:
				  ○ At least 40 m away from the nearest waterway
				  ○ In areas of low ecological conservation significance (i.e. previously disturbed land)
				  ○ On relatively level ground
				  ○ Outside the one in 10-year Average Recurrence Interval (ARI) floodplain
				• It is recommended to avoid decommissioning dams during the Little Pied Bat breeding season (September–December) to minimise stress and reduce the risk of young mortality
				• Consideration will be given to undertaking the works during low (or no) flow conditions where possible, to minimise impacts on aquatic organisms.
				• Impacts to snags (large woody debris >50 cm in two dimensions) within waterways will be avoided. If snags must be moved, they would be realigned within the waterway, rather than removed.

3. change flood or tidal regimes, or be affected by flooding?	Yes	Low	The removal of a number of dams present on Koonaburra NP may impact overland flooding.	Provide a staged approach to dam decommissioning and sequencing when more than one dam on a watercourse.
4. affect or be affected by coastal processes and coastal hazards, including those under climate change projections?	No	N/A	Non-coastal.	N/A
5. involve the use, storage or transport of hazardous substances, or use or generate chemicals which may build up residues in the environment?	No	N/A	No hazardous substances or chemicals required.	N/A

Is the proposed activity likely to…	Applies?	Impact level	Reasons	Safeguards/mitigation measures
6. involve the generation or disposal of gaseous, liquid or solid wastes or emissions?	Yes	Low	Any excess dam wall material may be used to infill the dam. No waste materials are anticipated.	Any leftover spoil material to be suitably managed on site or used for other purposes within the park.
7. involve the emission of dust, odours, noise, vibration or radiation?	Yes	Negligible	The decommissioning of the dams and the construction of the fenceline may cause dust to be raised. There are no nearby receivers.	Do not undertake works during high wind days.

9.2 Biodiversity impacts

Is the proposed activity likely to…	Applies?	Impact level	Reasons	Safeguards/mitigation measures
1. affect a declared area of outstanding biodiversity value, critical habitat or environmental asset of intergenerational significance?	No	N/A	The amount of clearing is not anticipated to be significant and will not impact any areas of outstanding biodiversity value, critical habitat or environmental asset of intergenerational significance.	N/A
2. result in the clearing or modification of vegetation, including ecological communities and plant community types of conservation significance?	Yes	Low-medium adverse	Approximately 77.63 ha of native vegetation and 12.15 ha of non-native vegetation will be removed. This represents a small portion (0.0019%) of the total area of Koonaburra National Park (45,534 ha). The 77.63 ha of **native vegetation** is associated with 14 PCTs (57, 72, 103, 104, 105, 108, 119, 143, 171, 173, 174, 207, 229, and 245). The area of each PCT impacted is shown in Table 5-1 of the BAR. Up to 0.94 ha of native vegetation to be cleared is a **threatened ecological**	• Any change in design outside the assessed impact footprint (proposal site) will likely require further ecological survey and assessment. • Where practical, before starting work, a physical vegetation clearing boundary at the approved clearing limit is to be demarcated and implemented. The delineation of such a boundary may include the use of temporary fencing, parawebbing or similar. • Stockpiling materials and equipment and parking vehicles would be avoided within the dripline (extent of foliage cover) of any tree. • All personnel should be inducted to vegetation clearing limits and no-go zones, and/or trees for retention/removal should be clearly delineated to ensure unapproved vegetation clearing does not

Is the proposed activity likely to…	Applies ?	Impact level	Reasons	Safeguards/mitigation measures
			community, namely the BC Act-listed EEC – *Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions* may be impacted by the proposal. A Test of Significance is in Appendix A concluding this is not a significant impact.	occur. This includes all native vegetation, threatened ecological communities (see Error! Reference source not found. in the BAR) a nd known/potential threatened flora and fauna that may be present (see Error! Reference source not found. in the BAR). E vidence of all personnel receiving an induction should be kept on file (signed induction sheets etc.). • A pre-clearing inspection including hollow bearing trees/habitat trees should be completed by a suitably experienced and qualified staff member or contractor prior to clearing. Any identified fauna should be relocated. • Construction crew should be briefed on the identification of priority weeds that occur on site during inductions (see **Table 6-1** in the BAR). • If declared priority weeds are identified during construction, they will be managed according to the requirements of the Biosecurity Act 2015. • If any threatened flora species are encountered, construction must stop in the immediate area and an ecologist should be consulted for advice and guidance before proceeding with works.
3. endanger, displace or disturb terrestrial or aquatic fauna, including fauna of conservation significance, or create a barrier to their movement?	Yes	Low	Up to 48 hollow bearing trees and hollow stags, 5 nests, and dead wood and bushrock occur within the proposal site. Provided mitigation measures are followed, no impacts to threatened fauna are anticipated. Location of the habitat trees are shown in Table 5-5 of the BAR. BC Act Tests of Significance and EPBC Matters of National Environmental Significance were completed, resulting in no significant impacts. Results are available in Appendix A.	• All personnel should be inducted to be aware of the potential presence of those threatened species listed in **Table 5-4** of the BAR. If any threatened species are encountered, an ecologist should be consulted prior to proceeding with construction. • Hollow-bearing trees and hollow logs should be avoided where possible. If any hollow-bearing trees need to be removed, a fauna spotter catcher should be present to ensure that no animals are injured. • Mature trees around dams will be avoided • The removal of hollow-bearing trees will be avoided wherever possible. • The tree containing 4 threatened Grey-crowned Babbler nests is to be avoided if possible. As this species uses these nests year-round for roosting, if this habitat tree must be removed, this should occur in the middle of the day, to reduce the chance of injuring roosting birds.

Is the proposed activity likely to…	Applies ?	Impact level	Reasons	Safeguards/mitigation measures
				• Removal of hollow-bearing trees with suitable breeding hollows for the Pink Cockatoo (>10 cm diameter) will not take place during this species' breeding season (August – November). • Felling of hollow bearing-trees is not permitted when the temperature exceeds 35°C. • A pre-clearance check should be conducted by a suitably qualified person prior to any vegetation disturbance, all potential habitat trees must be clearly marked with flagging tape or spray paint during the pre-clearance survey and evidence of occupation by fauna should be noted. • A fauna spotter catcher, or otherwise suitably qualified person, should be present during the removal of habitat trees to ensure that no animals are injured. • When removing hollow-bearing trees, surrounding areas should be cleared first, then the hollow should be inspected with a camera, if possible. If fauna is present, the tree will be left for one night to allow the fauna to move on before being felled. • Trees should be shaken by being tapped by an excavator or similar prior to felling in an attempt to scare fauna from hollows. • If the tree is being removed in stages, the hollow-bearing branch should be the last to be removed. • Following felling, hollows and the surrounding area are to be checked again to ensure no trapped or injured fauna are present. • Where practical, hollow bearing trees with a DBH of 40 cm or greater, should be retained and repurposed as coarse woody debris/ hollow bearing logs on the ground to provide habitat. • If injured fauna are encountered, a veterinarian or wildlife carer should be contacted for advice and/or rehabilitation. • Any fallen timber, dead wood and bush rock encountered on site should be left in situ (where possible) or relocated to a suitable place nearby.
4. result in the removal of protected flora or plants or fungi of conservation significance? ^	No	Negligible	All plants in national parks are protected but no plants or fungi of conservation significance were identified.	N/A

Is the proposed activity likely to…	Applies ?	Impact level	Reasons	Safeguards/mitigation measures
5. contribute to a key threatening process to biodiversity or ecological integrity?	Yes	Low	The proposal has been assessed against the Key Threatening Processes (Appendix F of the BAR). It found that the following KTPs are likely relevant and may be exacerbated by the proposal: • anthropogenic climate change • bushrock removal • clearing of native vegetation • competition from feral honey bees • infection by Psittacine Circoviral (beak and feather) Disease • invasion of native plant communities by exotic perennial grasses • loss of hollow-bearing trees • removal of dead wood and dead trees.	See safeguards and mitigation measures for points 2, 3, and 6.
6. introduce weeds, pathogens, pest animals or genetically modified organisms into an area?	Yes	Low	While **weed** species already exist within the site, this problem may be exacerbated by poor biosecurity controls, as a common cause of weed dispersal and importation is the attachment of seed (and other propagules) to vehicles and equipment. The proposal site is likely already inhabited by numerous **feral animals** such as goats, pigs, foxes, rabbits, feral cats, and wild dogs. Construction of the boundary fence will restrict the movement of larger pest species (i.e. goats and pigs) into the park. Several **pathogens** known from NSW have the potential to impact biodiversity if they are transported during the construction phase of this proposal. The most likely causes of pathogen dispersal and importation include earthworks, movement of soil, and attachment of plant matter to	• All personnel should be briefed on the identification of priority weeds that occur on site during inductions (see **Table 6-1** of the BAR). • Vehicles will be cleaned using a high-pressure washer or other suitable device before entering and exiting the site. • When transiting through weed-infested areas care should be taken to remove weed propagules from vehicles prior to proceeding into un-infested areas. • All food scraps and rubbish are to be appropriately disposed of in sealed receptacles to prevent providing forage habitats for pest animals. • If declared priority weeds are identified during construction, they will be managed according to the requirements of the *Biosecurity Act 2015* • All pesticides will be used in accordance with the requirements on the label. Any person carrying out pesticide (including herbicide) application will be trained to do so and have the proper certificate of completion/competency or statement of attainment issued by a registered training organisation.

Is the proposed activity likely to…	Applies ?	Impact level	Reasons	Safeguards/mitigation measures
			vehicles and machinery during establishment of the clear zone.	• Keep records of any weed control activities that take place.

9.3 Community impacts

Is the proposed activity likely to…	Applies ?	Impact level	Reasons	Safeguards/mitigation measures
1. affect community services or infrastructure?	Yes	Positive	Where fencing agreements are negotiated, neighbouring landholders will be provided with resources to build new fences that adjoin the park.	Ensure that any new fencing agreements are negotiated in accordance with the Boundary Fencing Policy.
2. affect sites important to the local or broader community for their recreational or other values or access to these sites?	No	N/A	The camping ground will remain unaffected by the proposal.	N/A
3. affect economic factors, including employment, industry and property value?	Yes	Negligible	Improved boundary fencing will minimise the movement of goats from neighbouring properties onto the park, reducing the impact of NPWS feral animal control on the neighbour's economic opportunity from mustering and sale of goats from their properties.	Ensure that the boundary trail fencing meets required minimum standards.
4. have an impact on the safety of the community?	No	N/A	Nil interaction with the community during the proposal.	N/A
5. cause a bushfire risk?	Yes	Negligible	Slight risk of machinery causing sparks during hot weather if preceding dry conditions.	During hot and dry conditions (>35^{o}C) do not undertake hot works; ensure cars are parked away from long grass, and do not use machinery that causes sparks or creates an ignition source.

Is the proposed activity likely to…	Applies ?	Impact level	Reasons	Safeguards/mitigation measures
6. affect the visual or scenic landscape?	Yes	Negligible	The construction of the boundary trail may have a minor impact on the scenic landscape.	Ensure that the boundary trail fencing uses standard stock-proof fence that is used commonly in the region consistent with the Boundary Fencing Policy.

9.4 Natural resource impacts

Is the proposed activity likely to…	Applies ?	Impact level	Reasons	Safeguards/mitigation measures
1. result in the degradation of the park or any other area reserved for conservation purposes?	No	N/A	It is anticipated that the proposal will have a positive impact on the park and improve the vegetation condition on site.	N/A
2. affect the use of, or the community's ability to use, natural resources?	No	N/A	The community use of the park will remain active during the proposal. The camping ground will remain unaffected by the proposal.	N/A
3. involve the use, wastage, destruction or depletion of natural resources including water, fuels, timber or extractive materials?	Yes	Low	The removal of 77.63 hectare of vegetation will initially have a minor negative impact, but goat exclusion will create along longer term benefits.	As per Section 9.2.
4. provide for the sustainable and efficient use of water and energy?	Yes	Low	The decommissioning of up to 8 dams will return the water flow to local waterways.	Provide a staged approach to dam decommissioning and sequencing when more than one dam on a watercourse.

9.5 Aboriginal cultural heritage impacts

Is the proposed activity likely to…	Applies?	Impact level	Reasons	Safeguards/mitigation measures
1. disturb the ground surface or any vegetation likely to contain culturally modified trees?	Yes	Negligible	Ground disturbance will occur during the construction of the boundary fence and trail and during dam decommissioning.	Work crews must undergo cultural heritage induction to ensure they recognise Aboriginal artefacts and are aware of the legislative protection of Aboriginal objects under the NPW Act and the contents of the *Unanticipated Finds Protocol.* The community interest tree identified during the Aboriginal Cultural Heritage Assessment fieldwork will not be impacted by the proposed works.
2. affect or occur near known Aboriginal objects, Aboriginal places or an Aboriginal cultural asset of intergenerational significance? If so, can impacts be avoided? How?	Yes	High adverse	Four recorded sites will be totally impacted by the proposal and a further six will be partially impacted. The remaining twelve sites will be completely avoided by the proposal. Where necessary, exclusion fencing will be used.	• The works trigger the need for detailed assessment via an ACHAR and an Aboriginal Heritage Impact Permit. • Any change in design outside the assessed impact footprint (proposal site) will likely require further heritage survey and assessment. • The portion of the sites outside of the AHIP area should be fenced to ensure no indirect harm arises from the proposal. • Site-specific mitigations are listed in Table 12.
3. affect areas: • within 200 m of waters • within a sand dune system • on a ridge top, ridge line or headland • within 200 m below or above a cliff face • in or within 20 m of a cave, rock shelter or a cave mouth?	Yes	Ranges from negligible to high adverse	Some areas within the named landscapes will be affected. The design of the project has taken into account known sites and avoided where possible. An AHIP will be sought for those sites that cannot be avoided.	• See Table 12 for the Mitigation Measures from the ACHAR.

Is the proposed activity likely to…	Applies?	Impact level	Reasons	Safeguards/mitigation measures
If so, can impacts be avoided? How?				
4. affect wild resources which are used or valued by the Aboriginal community or affect access to these resources?	No	N/A	The proposal does not affect wild resources.	N/A
5. affect access to culturally important locations?	No	N/A	The proposal does not affect access to culturally important locations.	N/A

As outlined in the ACHAR, the proposal will result in harm to several Aboriginal objects as described in Table 12. A tree of cultural interest, although not likely to be harmed, is located in proximity to the works. Additional sites are likely to be encountered during trail works.

An application for an AHIP will be submitted, recommending the site-specific management and mitigation measures as per Table 12. This is taken from Table 41 of the ACHAR, and references mitigation methodologies within the ACHAR.

Table 12. Management and mitigation measures for Aboriginal sites and the community interest tree within the study area.

AHIMS ID	Site name	Site type	Degree of harm	Management strategy from ACHAR
33-2-0070	Koonaburra NP-IF-010	Isolated find	Total – totally located within the proposal impact footprint.	Mapping, description, and movement of surface artefacts.
33-2-0072	Koonaburra NP-AS-005	Artefact scatter	Total – totally located within the proposal impact footprint.	Mapping, description, and movement of surface artefacts.
33-2-0079	Koonaburra NP-AS-012	Artefact scatter	Total – totally located within the proposal impact footprint.	Mapping, description, and movement of surface artefacts.
33-2-0083	Koonaburra NP-AS-015	Artefact scatter	Total – totally located within the proposal impact footprint.	Mapping, description, and movement of surface artefacts.
33-2-0071	Koonaburra NP-AS-004	Artefact scatter	Partial – partially located within the impact footprint.	Mapping, description, and movement of surface artefacts. The portion of the site outside of the AHIP area should be fenced to ensure no indirect harm arises from the proposal.

AHIMS ID	Site name	Site type	Degree of harm	Management strategy from ACHAR
33-2-0073	Koonaburra NP-AS-006	Artefact scatter	Partial – partially located within the impact footprint.	Mapping, description, and movement of surface artefacts. The portion of the site outside of the AHIP area should be fenced to ensure no indirect harm arises from the proposal.
33-2-0080	Koonaburra NP-AS-013	Artefact scatter	Partial – partially located within the impact footprint.	Mapping, description, and movement of surface artefacts. The portion of the site outside of the AHIP area should be fenced to ensure no indirect harm arises from the proposal.
33-2-0081	Koonaburra NP-AS-014	Artefact scatter	Partial – partially located within the impact footprint.	Mapping, description, and movement of surface artefacts. The portion of the site outside of the AHIP area should be fenced to ensure no indirect harm arises from the proposal.
33-2-0085	Koonaburra NP-OS-002 with PAD	Open campsite	Partial – partially located within the impact footprint.	Mapping, description, and movement of surface artefacts. The portion of the site outside of the AHIP area and the PAD area should be fenced to ensure no indirect harm arises from the proposal.
33-2-0086	Koonaburra NP-OS-003	Open campsite	Partial – partially located within the impact footprint.	Mapping, description, and movement of surface artefacts. Excavation of the hearth to obtain dating sample. The portion of the site outside of the AHIP area should be fenced to ensure no indirect harm arises from the proposal.
33-2-0065	Koonaburra NP-IF-005	Isolated find	No impact – the site will be avoided by the proposal.	The site location must be provided to all staff and contractors and a no-go zone must be established at the site location.
33-2-0066	Koonaburra NP-IF-006	Isolated find	No impact – the site will be avoided by the proposal.	The site location must be provided to all staff and contractors and a no-go zone must be established at the site location.
33-2-0067	Koonaburra NP-IF-007	Isolated find	No impact – the site will be avoided by the proposal.	The site location must be provided to all staff and contractors and a no-go zone must be established at the site location.
33-2-0068	Koonaburra NP-IF-008	Isolated find	No impact – the site will be avoided by the proposal.	The site location must be provided to all staff and contractors and a no-go zone must be established at the site location.
33-2-0069	Koonaburra NP-IF-009	Isolated find	No impact – the site will be avoided by the proposal.	The site location must be provided to all staff and contractors and a no-go zone must be established at the site location.
33-2-0074	Koonaburra NP-AS-007	Artefact scatter	No impact – the site will be avoided by the proposal.	The site location must be provided to all staff and contractors and a no-go zone must be established at the site location.
33-2-0075	Koonaburra NP-AS-008	Artefact scatter	No impact – the site will be avoided by the proposal.	The site location must be provided to all staff and contractors and a no-go zone must be established at the site location.

AHIMS ID	Site name	Site type	Degree of harm	Management strategy from ACHAR
33-2-0076	Koonaburra NP-AS-009	Artefact scatter	No impact – the site will be avoided by the proposal.	Despite being in the proposed AHIP area this site must be avoided by the proposal. This site must be fenced to ensure no harm arises from the proposal.
33-2-0077	Koonaburra NP-AS-010	Artefact scatter	No impact – the site will be avoided by the proposal.	The site location must be provided to all staff and contractors and a no-go zone must be established at the site location.
33-2-0078	Koonaburra NP-AS-011	Artefact scatter	No impact – the site will be avoided by the proposal.	The site location must be provided to all staff and contractors and a no-go zone must be established at the site location. This site must be fenced to ensure no indirect harm arises from the proposal.
33-2-0084	Koonaburra NP-OS-001	Open campsite	No impact – the site will be avoided by the proposal.	The site location must be provided to all staff and contractors and a no-go zone must be established at the site location.
33-2-0082	Koonaburra NP-H-001	Hearth	No impact – the site will be avoided by the proposal.	Despite being in the proposed AHIP area this site must be avoided by the proposal. This site must be fenced to ensure no harm arises from the proposal.
N/A	Community interest tree	Tree	No impact – the site will be avoided by the proposal.	The site location must be provided to all staff and contractors and a no-go zone must be established at the site location.

9.6 Other cultural heritage impacts

Is the proposed activity likely to…	Applies?	Impact level	Reasons	Safeguards/mitigation measures
1. affect or occur near places, buildings or landscapes of heritage significance?	No	Nil	There are no places, buildings or heritage significance in the proposal area. Whilst there are heritage items listed on the HHIMS and located within the park, they will not be impacted by the proposal.	N/A
2. impact on relics or moveable heritage items, or an area with a high likelihood of containing relics?	No	N/A	No known areas of other cultural heritage items will be affected by the proposal.	N/A
3. impact on vegetation of cultural landscape value (e.g. gardens	Yes	Positive	There are no known areas of cultural landscape values.	Ensure that the integrity of the fenceline is maintained.

Is the proposed activity likely to…	Applies?	Impact level	Reasons	Safeguards/mitigation measures
and settings, introduced exotic species, or evidence of broader remnant land uses)?			The removal of feral goats will improve the regeneration capacity of the natural vegetation present within the park.	

9.7 Impacts on matters of national environmental significance

Is the proposal likely to affect MNES, including:	Applies ?	Likely impact	Reasons	Safeguards/mitigation measures
1. listed threatened species or ecological communities?	Yes	Negligible	The removal of 77.63 hectare of vegetation has been assessed and determined that there will be a non-significant impact to MNES listed threatened species or ecological communities.	See 9.2 above.
2. listed migratory species?	Yes	Negligible	The clearing has been assessed and determined that there will be a non-significant impact to MNES listed threatened migratory species.	See 9.2 Above
3. the ecology of Ramsar wetlands?	No	N/A	No Ramsar wetlands in the proposal area.	N/A
4. world heritage values of World Heritage properties?	No	N/A	No World Heritage properties in the proposal area.	N/A
5. the national heritage values of national heritage places?	No	N/A	No places of National heritage in the proposal area.	N/A

9.8 Cumulative impacts

When considered with other projects, is the proposed activity likely to affect…	Applies ?	Impact level	Reasons	Safeguards/mitigation measures
1. natural landscape or biodiversity values through cumulative impacts?	No	Nil	There are no known other activities nearby that will have a cumulative impact on the proposal.	N/A
2. cultural (Aboriginal, shared and historic heritage) values through cumulative impacts?	No	Nil	There are no known other activities nearby that will have a cumulative impact on the proposal.	N/A
3. social (amenity, recreation, education) values through cumulative impacts?	No	Nil	There are no known other activities nearby that will have a cumulative impact on the proposal.	N/A
4. the community through cumulative impacts on any other part of environment (e.g. due to traffic, or waste generation)?	No	Nil	There are no known other activities nearby that will have a cumulative impact on the proposal.	N/A

10. Proposals needing more information

This REF does not need to be supported by additional information as it is not:

- located in the riverine lands of the River Murray (Chapter 5 of the Biodiversity and Conservation SEPP)
- located in a regulated catchment (Chapter 6 of the Biodiversity and Conservation SEPP)
- a telecommunication proposal (section 153D of the NPW Act).

11. Summary of impacts and conclusions

Table 13. Consideration of significance of impacts for each environmental factor

Environmental factor	Consideration	Significance of impact*
1. the environmental impact on the community	Social, economic and cultural impacts as described in sections 9.3, 9.5 and 9.6	Not significant
2. the transformation of the locality	Human and non-human environment as described in sections 9.1, 9.2 and 9.4	Not significant
3. the environmental impact on the ecosystems of the locality	Amount of clearing, loss of ecological integrity, habitat connectivity/fragmentation and changes to hydrology (both surface and groundwater) as described in sections 9.1, 9.2 and 9.4 and, for nationally listed threatened ecological communities, in section 9.7.	Not significant
4. reduction of the aesthetic, recreational, scientific or other environmental quality or value of the locality	Visual, recreational, scientific and other impacts as described in section 9.3.	Not significant
5. the effects on any locality, place or building that has— a. aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance, or b. other special value for present or future generations	Impacts to Aboriginal and historic heritage associated with a locality (including intangible cultural significance), architectural heritage, social/community values and identity, scenic values and others, as described in sections 9.3, 9.5 and 9.6 and (for MNES heritage places) section 9.7.	Not significant
6. the impact on the habitat of protected animals, within the meaning of the Biodiversity Conservation Act	Impacts to all native terrestrial species, including but not limited to threatened species, and their habitat requirements, as described in section 9.2.	Not significant
7. the endangering of a species of animal, plant or other form of life, whether living on land, in water or in the air	Impacts to all listed terrestrial and aquatic species, and whether the proposal increases the impact of key threatening processes, as described in section 9.2	Not significant
8. long-term effects on the environment	Long-term residual impacts to ecological, social and economic values as described in all parts of section 9.	Not significant
9. degradation of the quality of the environment	Ongoing residual impacts to ecological, social and economic as described in section 9.4.	Not significant
10. risk to the safety of the environment	Impacts to public and work health and safety, from contamination, bushfires, sea level rise, flood, storm surge, wind speeds, extreme heat, rockfall and landslip, and	Not significant

Environmental factor	Consideration	Significance of impact*
	other risks likely to increase due to climate change as described in sections 9.1, 9.3 and 9.4.	
11. reduction in the range of beneficial uses of the environment	Impacts to natural resources, community resources and existing uses as described in sections 9.3 and 9.4.	Not significant
12. pollution of the environment	Impacts due to air pollution (including odours and greenhouse gases); water pollution (water quality health); soil contamination; noise and vibration (including consideration of sensitive receptors); or light pollution, as described in sections 9.1 and 9.3.	Not significant
13. environmental problems associated with the disposal of waste	Transportation, disposal and contamination impacts as described in section 9.3.	Not significant
14. increased demands on natural or other resources that are, or are likely to become, in short supply	Impacts to land, soil, water, gravel, minerals and energy supply as described in section 9.4.	Not significant
15. the cumulative environmental effect with other existing or likely future activities	The negative synergisms with existing development or future activities as considered in section 9.8.	Not significant
16. the impact on coastal processes and coastal hazards, including those under projected climate change conditions	Impacts arising from the proposed activity on coastal processes, and impacts on the proposed activity from those coastal processes and hazards, both current and future, as considered in section 9.1.	Not significant
17. applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1	Inconsistency with the objectives, policies and actions identified in local, district and regional plans, as considered in section 3.2.2.	Not significant
18. other relevant environmental factors.	Any other factors relevant in assessing impacts on the environment to the fullest extent, such as native title.	Not significant

In conclusion:

1. There **is not** likely to be a significant effect on the environment and an environmental impact statement **is not** required.

   Reason(s): There will not be a significant long-term effect on the environment from the proposal. Short-term losses will be overcome by long term vegetation gains due to goat exclusion. Dam decommissioning will return natural waterway regimes to the majority of waterways on park.

2. There **is not** likely to be a significant effect on threatened species, populations, ecological communities or their habitats and a species impact statement **is not** required

Reason(s): The results of the biodiversity assessment have determined that there will not be a significant impact on the threatened species, populations, ecological communities or their habitats and a species impact is not required.

3. The activity **is not** likely to have a significant impact on matters of national environmental significance listed under the Environment Protection and Biodiversity Conservation Act (Cth) and so **will not** require referral to the Australian Government.

   Reason(s): Assessments of significance completed as part of the biodiversity assessment have determined that there will not be a significant impact on matters of national environmental significance under the EPBC Act and will not require referral to the Australian Government.

4. The activity **will not** require certification to the Building Code of Australia, Disability (Access to Premises – Buildings) Standards 2010 or Australian Standards in accordance with the NPWS Construction Assessment Procedures

12. Supporting documentation

Please provide details of documentation included with this application.

Table 14. Documents that accompany the review of environmental factors

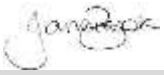
Document title	Author	Date
Koonaburra National Park – Biodiversity Assessment Report	OzArk Environment & Heritage	January 2025
Koonaburra National Park – Aboriginal Cultural Heritage Assessment Report	OzArk Environment & Heritage	February 2025

13. Fees for external proponents

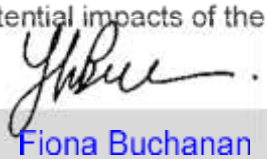
Not relevant – internal proponent.

14. Declarations

As the person responsible for the **preparation** of the REF, I certify that, to the best of my knowledge, this REF is in accordance with the EP&A Act, the EP&A Regs and the Guidelines approved under section 170 of the EP&A Regs, and the information it contains is neither false nor misleading.

Signature	
Name (printed)	Jane Book
Position	Senior Environmental Scientist
Date	14/03/2025

By **endorsing** the REF, the proponent confirms that the information in the REF is accurate and adequate to ensure that all potential impacts of the activity can be identified.

Signature	
Name (printed)	Fiona Buchanan
Position	Manager, Central West Area
Date	24/04/2025

Seal (if signing under seal):

15. References

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Appendix A: Threatened species tests of significance

The Biodiversity Assessment Report – Appendices C, D and E provide these tests of significance.

Species and communities listed under Biodiversity Conservation Act

See BAR Appendix C, D

Species and communities listed under Fisheries Management Act

See BAR Appendix C, D

Nationally listed species and communities

See BAR Appendix C, E