



Ramsar Information Sheet

Australia

Paroo River Wetlands



Designation date	13 September 2007
Site number	1716
Coordinates	30°19'58"S 143°50'30"E
Area	138 304,00 ha

Color codes

Fields back-shaded in light blue relate to data and information required only for RIS updates.

Note that some fields concerning aspects of Part 3, the Ecological Character Description of the RIS (tinted in purple), are not expected to be completed as part of a standard RIS, but are included for completeness so as to provide the requested consistency between the RIS and the format of a 'full' Ecological Character Description, as adopted in Resolution X.15 (2008). If a Contracting Party does have information available that is relevant to these fields (for example from a national format Ecological Character Description) it may, if it wishes to, include information in these additional fields.

1 - Summary

1.1 - Summary description

Please provide a short descriptive text summarising the key characteristics and internationally important aspects of the site.

You may prefer to complete the four following sections before returning to draft this summary.

Summary

(This field is limited to 2500 characters)

The Paroo River Wetlands are located in far north-west New South Wales (NSW) and consists of the Nocoleche Nature Reserve (180 km west of Bourke) and the Peery component (240 km south-west of Bourke). Both components of the site lie on the floodplain of the Paroo River. Nocoleche is 120 km north of Peery. The Paroo River wetlands site is listed on the Ramsar Convention as a site of international significance and is protected under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

The Paroo River is the last remaining free-flowing river in the Murray-Darling Basin, although some water is taken from the river by diversion of flow or overland flows. Wetland types within the site include large overflow lakes, tree-lined creeks and waterholes, lignum and canegrass swamps, and artesian mound springs which are listed as endangered under the EPBC Act. It is one of the most important wetland systems for waterbirds in eastern Australia constituting a key drought refuge in arid NSW and supporting waterbird breeding. Eleven species of waterbirds have been recorded breeding at Peery Lake and 38 species at Nocoleche Nature Reserve, including fifteen species covered by international migratory bird agreements. The springs at Peery Lake represent the largest active complex in New South Wales and one of the rarest landforms in Australia.

The wetlands have been recognised as a significant refuge for biological diversity, as they contain unique genetic, species and ecosystem diversity including a number of threatened plant and animal species and native fish communities.

The ecological character of the Paroo River Wetlands consists of biological components (waterbirds, invertebrates, fish and vegetation), chemical characteristics (water quality, nutrient levels and soil characteristics) and physical components (hydrology, fire, inundation, climate and geomorphology).

While the site provides provisioning services such as water supply and cultural services such as maintenance of heritage, scientific research, recreation and tourism, these are not considered critical to the site.

Climate change is predicted to have a significant impact on the sites wetlands ecology in terms of reduced rainfall; a reduction in water volume; a small reduction in the average frequency and total volume of high flows to the overflow lakes; increased high rainfall intensity and an increase in the frequency of the larger floods.

2 - Data & location

2.1 - Formal data

2.1.1 - Name and address of the compiler of this RIS

Compiler 1

Name	Programs Officer, Environmental Water Governance
Institution/agency	NSW Office of Environment and Heritage
Postal address (This field is limited to 254 characters)	PO Box A290 Sydney South NSW 1232
E-mail	ramsar.wetlands@environment.nsw.gov.au
Phone	612 6229 7053
Fax	

Compiler 2

Name	
Institution/agency	
Postal address (This field is limited to 254 characters)	
E-mail	
Phone	
Fax	

2.1.2 - Period of collection of data and information used to compile the RIS

From year	2005
To year	2017

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Paroo River Wetlands
Unofficial name (optional)	Nocoleche Nature Reserve, and Peery and Mandalay Blocks (to be referred to as 'Peery') in Paroo – Darling National Park

2.1.4 - Changes to the boundaries and area of the Site since its designation or earlier update

(Update) A. Changes to Site boundary	Yes <input type="radio"/> No <input checked="" type="radio"/>
(Update) The boundary has been delineated more accurately	<input type="checkbox"/>
(Update) The boundary has been extended	<input type="checkbox"/>
(Update) The boundary has been restricted	<input type="checkbox"/>
(Update) B. Changes to Site area	No change to area
(Update) The Site area has been calculated more accurately	<input type="checkbox"/>
(Update) The Site has been delineated more accurately	<input type="checkbox"/>
(Update) The Site area has increased because of a boundary extension	<input type="checkbox"/>
(Update) The Site area has decreased because of a boundary restriction	<input type="checkbox"/>

Important note: If the boundary of the designated site is being restricted/reduced, before submitting this updated RIS to the Secretariat the Contracting Party should have followed:

- the requirements in Article 2.5 of the Convention; or
- the procedures established by the Conference of the Parties in the annex to Resolution VIII.20 (2002); or
- where appropriate instead, the procedures in the annex to Resolution IX.6 (2005). Contracting Parties should also have provided to the Secretariat a report on changes prior to the submission of an updated RIS.

2.1.5 - Changes to the ecological character of the Site

(Update) 6b i. Has the ecological character of the Ramsar Site (including applicable Criteria) changed since the previous RIS?	No
(Update) Are the changes	Positive <input type="radio"/> Negative <input type="radio"/> Positive & Negative <input checked="" type="radio"/>

What extent of the Ramsar site is affected (%)

(Update) Positive %	<input type="text"/>
(Update) Negative %	<input type="text"/>
(Update) No information available	<input type="checkbox"/>

(Update) Optional text box to provide further information

(This field is limited to 2000 characters)

Due to predicted climate change and changed flow conditions upstream the frequency of flooding to the site is likely to decrease and flows will become increasingly intermittent. Higher temperatures will cause greater evaporation.

Are changes the result of (tick each category which applies):

(Update) Changes resulting from causes operating within the existing boundaries?	<input type="checkbox"/>
(Update) Changes resulting from causes operating beyond the site's boundaries?	<input type="checkbox"/>
(Update) Changes consequent upon site boundary reduction alone (e.g., the exclusion of some wetland types formerly included within the site)?	<input type="checkbox"/>
(Update) Changes consequent upon site boundary increase alone (e.g., the inclusion of different wetland types in the site)?	<input type="checkbox"/>
(Update) Please describe any changes to the ecological character of the Ramsar Site, including in the application of the Criteria, since the previous RIS for the site. (This field is limited to characters)	
<input type="text"/>	
(Update) Is the change in ecological character negative, human-induced AND a significant change (above the limit of acceptable change)	Yes <input type="radio"/> No <input checked="" type="radio"/>
(Update) Has an Article 3.2 report been submitted to the Secretariat?	Yes <input type="radio"/> No <input checked="" type="radio"/>

2.2 - Site location

2.2.1 - Defining the Site boundaries

a) GIS boundaries [link](#)

Materials presented on this website, particularly maps and territorial information, are as-is and as-available based on available data and do not imply the expression of any opinion whatsoever on the part of the Secretariat of the Ramsar Convention concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

b) Digital map/image

 [AU1716map_over.pdf](#)

 [AU1716map_add.zip](#)

 [AU1716_map171220_Paroo_Map_2017.pdf](#)

Former maps

<no file available>

Boundaries description

(This field is limited to 2500 characters)

The Paroo River Wetlands consist of two main parts; the Nocoleche Nature Reserve component and the Peery component.

Nocoleche Nature Reserve coordinates: 141° 15' 6", -029° 90' 2" (centroid)

Peery Lake coordinates: 143° 52' 8", -030° 76' 4" (centroid)

The northern component of the Paroo Ramsar site is the boundary of Nocoleche Nature Reserve (as gazetted in September 1979). A travelling stock reserve (TSR) and the Wanaaring-Wilcannia road running from north to south divide the Nocoleche Nature Reserve and are not included in the Ramsar site. Areas of the channel of the Paroo River in the north and south of Nocoleche Nature Reserve are also excluded from the Ramsar site. These exclusions are clearly marked on the maps provided.

The boundary for the Peery component of the Ramsar site is the reserve boundary of the north-western most component of Paroo-Darling National Park (as gazetted on 31 March 2000), except for the area south of a line commencing at approximate coordinate 143°24'20.69", -30°49'3.75" on the south-western corner of Arrow Bar (DP766091) then following the Arrow Bar/Mandalay boundary (DP766091 and DP822042 of NSW cadastre dated 2004) east and then south to approximately 143°25'24.43", -30°49'46.60", then following the Arrow Bar/Mandalay boundary southward to approximately 143°27'7.32", -30°57'2.51", then east to approximately 143°29'25.37", -30°57'11.91". The boundary of this portion of the Ramsar site then continues, initially in an easterly and then northerly direction, to follow the gazetted boundary of this part of Paroo-Darling National Park. The Wilcannia-Wanaaring Road (60.35m wide), running through Peery (DP766074, DP822042 and DP822042), is excluded from the Ramsar site.

Coordinates of the centre of the site, as automatically estimated from the GIS boundaries (for information only)

2.2.2 - General location

- a) In which large administrative region does the site lie?
- b) What is the nearest town or population centre?

2.2.3 - For wetlands on national boundaries only

- a) Does the wetland extend onto the territory of one or more other countries? Yes ☐ No ☒
- b) Is the site adjacent to another designated Ramsar Site on the territory of another Contracting Party? Yes ☐ No ☒
- c) Is the site part of a formal transboundary designation with another Contracting Party? Yes ☐ No ☒
- d) Transboundary Ramsar Site name:

2.2.4 - Area of the Site

If you have not established an official area by other means, you can copy the area calculated from the GIS boundaries into the 'official area' box.

Official area, in hectares (ha):

Area, in hectares (ha) as calculated from GIS boundaries

2.2.5 - Biogeography

Please provide the biogeographic region(s) encompassing the site and the biogeographic regionalization scheme applied:

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Other scheme (provide name below)	Murray-Darling Basin: Paroo River

Other biogeographic regionalisation scheme

(This field is limited to 2500 characters)

Australian Hydrological Geospatial Fabric (Geofabric): Topographic Drainage Divisions and River Regions (BOM 2012) – Murray-Darling Basin: Paroo River

3 - Why is the Site important?

3.1 - Ramsar Criteria and their justification

Tick the box against each criterion applied to the designation of the Ramsar Site. All criteria which apply should be ticked.

Please explain why you selected a criterion by filling in the relevant fields on this page, on the three other pages of this section 'Criteria & justification' and on the 'Wetland types' page of the section 'What is the site like?'. More guidance on how to justify a criterion will appear when you tick it as well as in the help box.

☒ Criterion 1: Representative, rare or unique natural or near-natural wetland types

To justify this Criterion, please select at least one wetland type as representative, rare or unique in the section What is the site like? > Wetland types and provide further details in at least one of the three boxes below.

Hydrological services provided
(This field is limited to 3000 characters)

The Paroo River is the last free-flowing river in the Murray-Darling Basin although some water is taken from the river by diversion of flow or overland flows. It is a unique example of a near natural, arid, inland wetland system. The extent and duration of flooding and drying of the river and it's natural drainage features, remains as a near natural regime. This is an important factor for the maintenance of biological diversity in the region (NPWS 2000).

Water flows in the Paroo are episodic in nature with 'permanent' water holes within the river system being important refugia for fish and other aquatic species during periods of low water flows. Water from the Paroo reaches the Darling only during infrequent major flooding events. More often flows terminate in the floodplains and wetland systems south of the Nocoleche component. High water flows in the Warrego River also contribute to the Paroo through the Cuttaburra Creek, connecting the two systems. Peery Lake, the largest overflow lake on this system, contains 2 distinct sets of artesian mound springs comprising the largest active spring complex in the state and the only known springs to occur on lake beds in NSW. The springs are characterised either by mounds of sediment and salts deposited as water evaporates (Ponder 1986, 1999) or depressions. The mound springs are caused by pressure of the Great Artisian Basin and groundwater is a critical process in the wetland diversity of this site.

Other ecosystem services provided
(This field is limited to 3000 characters)

The site provides a unique example of a near natural, arid, inland wetland system. The pattern of water flow remains largely natural. This is important for maintaining the biological diversity in the region. The wetlands and their associated flora and fauna are unusually diverse because of huge variations in the water regime, mainly resulting from unpredictable rainfall across the catchment.

Other reasons
(This field is limited to 3000 characters)

☒ Criterion 2 : Rare species and threatened ecological communities

Justification, see: - relevant plant species in the section Criteria & justification> Plant species (3.2) - relevant animal species in the section Criteria & justification> Animal species (3.3) - relevant ecological communities in the section Criteria & justification> Ecological communities (3.4)

Paroo-Darling National Park component of the site supports the plant species, Salt Pipewort (*Eriocaulon carsonii*) which is listed under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and the ROTAP list of vulnerable species (Briggs and Leigh 1996). It is considered one of the rarest vascular plant species in NSW. The 'The community of native species dependent on natural discharge of groundwater from the Great Artesian Basin' Ecological Community of which *Eriocaulon carsonii* is a key component, on Peery, is listed as endangered under the EPBC Act .

Optional text box to provide further information
(This field is limited to 3000 characters)

At Peery Lake the mound springs provide habitat for a nationally threatened plant species, the endemic Salt Pipewort (*Eriocaulon carsonii*). This is the only remaining population in NSW and consists of a single population with highly variable numbers. The largest number of individuals was estimated at a few thousand and more recently, the numbers have dropped to a few hundred. These variations are related to the filling of Peery Lake and additional unknown causes. *Eriocaulon carsonii* is a mound spring endemic, entirely restricted to flowing mound springs. It is known from mound springs in Queensland, NSW and South Australia. In NSW, it is only known from a single spring on the western side of Peery Lake. The population and cover of *E. carsonii* at Peery was assessed using quadrats. It was estimated that *E. carsonii* covers an area of 6500 cm² and the maximum number of individual plants is 3000 (Pickard 1996). This is considered to be a crude upper estimate of the population. Knowledge of seasonal variability and reproduction of this plant is lacking. Threats to *E. carsonii* include reduction of water flow in the mound springs and trampling by vertebrate herbivores.

☒ **Criterion 3 : Biological diversity**

Justification, see: - relevant plant species in the section Criteria & justification> Plant species (3.2) - relevant animal species in the section Criteria & justification> Animal species (3.3)

The Paroo River Wetlands have been recognised as a significant refuge for biological diversity, as they contain unique genetic, species and ecosystem diversity. Understanding of each of these levels is limited, but several studies have shown the existence of unique biological diversity (Watts 1999). For example, there are newly identified plant and crustacean species, and a separate breeding population of Golden Perch (*Macquaria ambigua*). In addition, the biodiversity of the bird populations is well known, with the wetlands of the Paroo and the Warrego rivers being arguably the most important area for waterbirds in the Murray-Darling Basin (Kingsford and Porter 1999). See Attachment 1 for detailed information on the biodiversity of the Paroo River Wetlands.

Justification
(This field is limited to 3000 characters)

Significantly, the Paroo River Wetlands support a number of endemic species such as Yapunyah (*Eucalyptus ochrophloia*); Fairy Shrimps (*Branchinella budjiti* and *B. campbelli*); a new genus in the family Branchipodidae and a new species of *Parastreptocephalus* (*Streptocephalidae*) (Timms 2001); Golden perch (*Macquaria ambigua*) (Keenan et al. 1996, 1998); Striped Skink (*Ctenotus* sp.); Earless Dragon (*Tympanocryptis* sp.) (Ross Sadler pers. comm.); Starfruit (*Dentella minutissima*); aquatic plants (*Aponogeton queenslandicus* and *Goodenia 'nocolche'*) (Pellow and Porter in press); a charophyte algal (*Nitella partita*) and *Nitella 'parooensis'*; and Peery Lake Mound Springs supports an undescribed species of *Utricularia* (Westbrooke et al. 2003).

☒ **Criterion 4 : Support during critical life cycle stage or in adverse conditions**

Justification, see: - relevant plant species in the section Criteria & justification> Plant species (3.2) - relevant animal species in the section Criteria & justification> Animal species (3.3) and explain the life cycle stage or nature of adverse conditions in the accompanying 'justification' box

The Paroo River Wetlands and, in particular Peery and Poloko Lakes, constitute a key drought refuge in arid NSW (Morton et al. 1995) and the site also plays an important role in relation to waterbird breeding (Kingsford and Porter 1999). Eleven species of waterbirds have been recorded breeding at Peery Lake and 38 species at Nocoleche Nature Reserve (Kingsford and Porter 1999).

There is a high variability in waterbird abundance and species richness on the Paroo overflow lakes as a result of climate variability. Since 2010, the highest numbers of waterbirds were recorded in 2011, with the Eastern Australian Waterbird Aerial Surveys indicating the site supported up to 643,666 waterbirds, followed by 2013 which recorded 168,692 waterbirds. This was a result of a large and widespread flooding in Australia at the time. In more recent drier years the site supported 1541 in 2016 and 3821 in 2017 (UNSW 2019). Species richness is also highly variable and averages 22 species.

Lake Peery is dependent on the volume of flow into the lakes and particularly the backfilling from any flood into the Darling River heading back up the interconnecting streams. After filling, Lake Poloko can hold water for up to 22 months (in Kingsford et al. 1994) and Lake Peery may hold water for 36 months (Maher 1991). The longevity of water in Lake Peery is tied heavily to the dynamics in the Darling, even if the systems are independent most of the time. Lakes Peery and Poloko are freshwater lakes that become more brackish as the flood waters recede. Generally, salt lakes tend to support higher numbers of waterbirds. This is largely related to food resources, with larger numbers of planktonic invertebrates and more macrophyte vegetation generally occurring in salt lakes as they dry after large rainfall events (Kingsford and Porter 1994). With many waterbirds heading inland to desert lakes as they fill (Kingsford et al 1997).

Peery and Poloko supported their greatest numbers when drying up and slightly saline (Kingsford et al. 1997). Lake Peery is able to maintain considerable populations of many waterbird species for up to 15 months after the end of a flood cycle when all other wetlands in the area have dried up or receded.

The artesian springs in Lake Peery are one of the few places where permanent water occurs away from the Darling River (NPWS 2000).

The Paroo River contains one of the healthiest native fish communities in the Murray-Darling river system, with high species diversity, strong recruitment of native species, and a relatively low incidence of exotic fish (Gehrke et al. 1999). The maintenance of species diversity relies on the assortment of habitats provided along the Paroo, including pools, floodplains and permanent or semi-permanent lakes. Golden Perch and bony herring (*Nematolosa erebi*) are common in remnant waters in the Paroo catchment during the dry season (Boulton 1999).

Optional text box to provide further information
(This field is limited to 3000 characters)

☒ **Criterion 5 : >20,000 waterbirds**

Justification, see:- the total number of waterbirds and the period of data collection - relevant waterbird species, and if possible their population size, in the section Criteria & justification> Animal species (3.3)

Overall waterbird numbers	257,907
Start year	2010
End year	2016
Source of data:	UNSW (2019), National Waterbird Survey 2019

Optional text box to provide further information
(This field is limited to 3000 characters)

During times of flooding there is a considerable variation in numbers as a result of the highly variable nature of river flow and rainfall patterns.

Since 2010, the highest numbers of waterbirds were recorded in 2011, with the Eastern Australian Waterbird Aerial Surveys indicating the site supported up to 643,666 waterbirds, followed by 2013 which recorded 168,692 waterbirds. This was a result of a large and widespread flooding in Australia at the time. In more recent drier years the site supported 1541 in 2016 and 3821 in 2017 (UNSW 2019).

☐ **Criterion 6 : >1% waterbird population**

Justification, see: Criteria & justification > Animal species (3.3)

Optional text box to provide further information
(This field is limited to 3000 characters)

☒ **Criterion 7 : Significant and representative fish**

Justification, see: Criteria & justification > Animal species (3.3)

Justification
(This field is limited to 3000 characters)

The Paroo River Wetlands support one of the healthiest native fish communities in the Murray Darling Basin. Recent research has found the population of Golden Perch (*Macquaria ambigua*) is genetically distinct and effectively a separate breeding population from Golden Perch elsewhere in the Murray-Darling Basin (Watts, 1999; Keenan et al. 1996, 1998). This species has a higher dispersal capability than the six other native fish species (Silver Perch *Bidyanus bidyanus*, Spangled Perch *Leiopotherapon unicolor*, Bony Herring *Nematalosa erebi*, Hyrtl's Tandan *Neosilurus hyrtl*, Crimson-spotted Rainbowfish *Melanotaenia fluviatili* and Australian Smelt *Retropinna semoni*) found in the Paroo River Wetlands. Although research has not been undertaken it is highly likely that these seven species will show similar genetic distinctiveness. The Paroo River wetlands support a significant discrete component of the genetic diversity of fish in the Murray-Darling Basin (Watts 1999).

☐ **Criterion 8 : Fish spawning grounds, etc.**

To justify this Criterion, please give information in the box below. Completion of details on relevant fish species in the section Criteria & justification > Animal species (3.3) is optional.








Justification
(This field is limited to 3000 characters)

☐ **Criterion 9 : >1% non-avian animal population**

To justify this Criterion, please give details on relevant non-avian species and their population size in the section Criteria & justification > Animal species (3.3)

Optional text box to provide further information
(This field is limited to 3000 characters)

3.2 - Plant species whose presence relates to the international importance of the site












Scientific name	Common name	Criterion 2	Criterion 3	Criterion 4	IUCN Red List	CITES Appendix I	Other status	Justification
<i>Dentella minutissima</i> 	Starfruit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Endangered in NSW (BCA)	High level of endemism. Only found in two locations in NSW, both on the Paroo floodplain
<i>Elytrophorus spicatus</i> 	Spike grass	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LC 	<input type="checkbox"/>	NA	Only recorded occurrence in NSW (Nocoleche NR)
<i>Eriocaulon carsonii</i> 	Salt pipewort	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	endemic to this region in NSW	High level of endemism. Endangered - only remaining population in NSW, (restricted to flowing mound springs) – single population with highly variable numbers – numbers have been reported dropping from a few thousand individuals to a few hundred (2006)
<i>Eucalyptus ochrophloia</i> 	Yapunyah	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	NA	High level of endemism.
<i>Glinus orygioides</i> 	Desert Carpet-weed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	ROTAP	Listed as threatened in NSW – Believed to occur at Peery Lake
<i>Schoenoplectus pungens</i> 	Sharp club rush	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	NA	High level of endemism. Only known population in western NSW – considered of conservation concern









































Optional text box to provide further information on plant species of international importance:




(This field is limited to 3000 characters)

unique/last remaining example of a particular plant community

3.3 - Animal species whose presence relates to the international importance of the site

Phylum	Scientific name	Common name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
			2	4	6	9	3	5	7	8								
Birds																		
CHORDATA/AVES	 <i>Actitis hypoleucos</i>	Common Sandpiper	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	Migratory (EPBC) Marine (EPBC)	Listed on JAMBA CAMBA ROKAMBA
CHORDATA/AVES	 <i>Ardea alba</i>	Great egret	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	Migratory (EPBC) Marine (EPBC)	Of conservation concern in western NSW listed on JAMBA CAMBA
CHORDATA/AVES	 <i>Ardeotis australis</i>	Australian Bustard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vulnerable in NSW (BCA)	
CHORDATA	 <i>Aves</i>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/AVES	 <i>Cacatua leadbeateri</i>	Major Mitchell's Cockatoo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vulnerable in NSW (BCA)	
CHORDATA/AVES	 <i>Calidris acuminata</i>	Sharp-tailed Sandpiper	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	Migratory (EPBC) Marine (EPBC)	Listed on JAMBA CAMBA ROKAMBA

Phylum	Scientific name	Common name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
			2	4	6	9	3	5	7	8								
CHORDATA/AVES	<i>Calidris ferruginea</i> 	Curlew Sandpiper	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT 	<input type="checkbox"/>	<input type="checkbox"/>	Nationally critically endangered (EPBC) Migratory (EPBC) Marine (EPBC)	Listed on JAMBA CAMBA ROKAMBA
CHORDATA/AVES	<i>Calidris ruficollis</i> 	Red-necked Stint	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT 	<input type="checkbox"/>	<input type="checkbox"/>	Migratory (EPBC) Marine (EPBC)	Listed on JAMBA CAMBA ROKAMBA
CHORDATA/AVES	<i>Calidris subminuta</i> 	Long-toed Stint	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	Migratory (EPBC) Marine (EPBC)	Listed on JAMBA CAMBA ROKAMBA
CHORDATA/AVES	<i>Certhionyx variegatus</i> 	Pied Honeyeater	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	Vulnerable in NSW (BCA)	
CHORDATA/AVES	<i>Climacteris picummus</i> 	Brown Treecreeper	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	Vulnerable in NSW (BCA)	
CHORDATA/AVES	<i>Falco hypoleucos</i> 	Grey Falcon	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				VU 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vulnerable in NSW (BCA)	State listed as Vulnerable
CHORDATA/AVES	<i>Grus rubicunda</i> 	Brolga	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vulnerable in NSW (BCA)	State listed as Vulnerable
CHORDATA/AVES	<i>Hamirostra melanostemon</i> 	Black-breasted Buzzard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vulnerable in NSW (BCA)	State listed as Vulnerable
CHORDATA/AVES	<i>Limosa lapponica</i> 	Bar-tailed Godwit	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT 	<input type="checkbox"/>	<input type="checkbox"/>	Migratory (EPBC) Marine (EPBC)	Listed on JAMBA CAMBA ROKAMBA
CHORDATA/AVES	<i>Limosa limosa</i> 	Black-tailed Godwit	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT 	<input type="checkbox"/>	<input type="checkbox"/>	Nationally vulnerable (EPBC) Migratory (EPBC) Marine (EPBC)	Listed on JAMBA CAMBA ROKAMBA
CHORDATA/AVES	<i>Lophoictinia isura</i> 	Square-tailed Kite	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vulnerable in NSW (BCA)	
CHORDATA/AVES	<i>Oxyura australis</i> 	Blue-billed Duck	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT 	<input type="checkbox"/>	<input type="checkbox"/>	Vulnerable in NSW (BCA)	
CHORDATA/AVES	<i>Plegadis falcinellus</i> 	Glossy Ibis	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	Migratory (EPBC) Marine (EPBC)	Conservation concern in western NSW Listed on JAMBA CAMBA
CHORDATA/AVES	<i>Pomatostomus halli</i> 	Hall's Babbler	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	Vulnerable in NSW (BCA)	
CHORDATA/AVES	<i>Rostratula benghalensis</i> 	Greater Painted Snipe	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	Nationally endangered (EPBC) Marine (EPBC)	Listed on JAMBA CAMBA
CHORDATA/AVES	<i>Stictonetta naevosa</i> 	Freckled Duck	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	Vulnerable in NSW (BCA)	
CHORDATA/AVES	<i>Tringa glareola</i> 	Wood Sandpiper	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	Migratory (EPBC) Marine (EPBC)	Listed on JAMBA CAMBA ROKAMBA
CHORDATA/AVES	<i>Tringa nebularia</i> 	Common Greenshank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	Nationally critically endangered (EPBC)	Listed on JAMBA CAMBA ROKAMBA
CHORDATA/AVES	<i>Tringa stagnatilis</i> 	Marsh Sandpiper	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	Nationally critically endangered (EPBC)	Listed on JAMBA CAMBA ROKAMBA
Fish, Mollusc and Crustacea																		
CHORDATA/ACTINOPTERYGII	<i>Brydanus brydanus</i> 	Silver perch	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				VU 	<input type="checkbox"/>	<input type="checkbox"/>	Nationally critically endangered (EPBC)	
Others																		

Phylum	Scientific name	Common name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
			2	4	6	9	3	5	7	8								
CHORDATA	<i>Amphibia</i>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/ MAMMALIA	<i>Chalinolobus picatus</i>	little pied bat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT 	<input type="checkbox"/>	<input type="checkbox"/>	Vulnerable in NSW (BCA)	
CHORDATA/ REPTILIA	<i>Diplodactylus conspicillatus</i>	Fat-tailed gecko	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>	Vulnerable in NSW (BCA)	
CHORDATA	<i>Mammalia</i>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA	<i>Reptilia</i>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/ MAMMALIA	<i>Saccolaimus flaviventris</i>	Yellow-bellied Pouched Bat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	Vulnerable in NSW (BCA)	
CHORDATA/ MAMMALIA	<i>Vespudelus baverstocki</i>	Baverstock's Forest Bat; inland forest bat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC 	<input type="checkbox"/>	<input type="checkbox"/>	Vulnerable in NSW (BCA)	

1) Percentage of the total biogeographic population at the site

Optional text box to provide further information on animal species of international importance:

(This field is limited to 3000 characters)

Newly identified endemic crustacean species (Nocoleche NR) – macroinvertebrate community includes two new species of fairy shrimp *Branchinella budjiti* and *B. campbelli*, a new genus in the family Branchipodidae, and a new species of Parrastreptocephalus (*Streptocephalidae*) – (not found in Peery Lake or Poloko Lake)

3.4 - Ecological communities whose presence relates to the international importance of the site

Name of ecological community	Community qualifies under Criterion 2?	Description	Justification
Artesian Springs Ecological Community	<input checked="" type="checkbox"/>	Community of native species dependent on natural discharge of groundwater from the Great Artesian Basin	Listed endangered under the EPBC Act

Optional text box to provide further information

(This field is limited to 3000 characters)

4 - What is the Site like? (Ecological character description)

4.1 - Ecological character

Please summarize the ecological components, processes and services which are critical to determining the ecological character of the site. Please also summarize any natural variability in the ecological character of the site, and any known past or current change

(This field is limited to 4000 characters)

The Paroo River is the last free-flowing river in the Murray-Darling Basin and hence is a unique example of a near natural arid inland river system. There is a range of different wetland types in the catchment including claypans and canegrass swamps, river channels and waterholes, black box swamps, Eleocharis swamps, Lignum swamps and overflow plains, freshwater lakes, salt lakes and mound springs. The Nocoleche Nature Reserve component of the Ramsar site has all but freshwater lakes, salt lakes and mound springs. The Peery component includes freshwater lakes (Peery and Poloko Lakes) and intermittent river channels and swamps. Peery Lake also contains several examples of active mound springs (natural discharge points from the Great Artesian Basin), the rarest landform in Australia, and these have significant conservation value due to their being the largest active spring complex in New South Wales on a lakebed.

Wetlands within the Paroo River Wetlands Ramsar Site support endangered flora and fauna of restricted distribution, support endangered ecological communities, support a high abundance and diversity of waterbirds during critical stages of their life cycles, provide drought refuge for fauna, and are significant for native fish communities. Flooding and drying cycles of the Paroo River, which are driven by climate and affected by geomorphology, are critical for supporting the flora and fauna of the Paroo, along with the physicochemical environments of wetlands.

The ecological character of the Paroo River Wetlands consists of biological components (waterbirds, invertebrates, fish and vegetation), chemical characteristics (water quality, nutrient levels and soil characteristics) and physical components (hydrology, fire, inundation, climate and geomorphology).

While the site provides provisioning services such as water supply and cultural services such as maintenance of heritage, scientific research, recreation and tourism, these are not considered critical to the site.

A full description of the ecological Character of the Paroo River Wetlands Ramsar site can be found in Ecological Character Description of the Paroo River Wetlands Ramsar Site (Richard T. Kingsford & Enhua Lee, March 2007), see link at Part 5 of this RIS.

4.2 - What wetland type(s) are in the site?

Please list all wetland types which occur on the site, and for each of them:

- rank the four most abundant types by area from 1 (greatest extent) to 4 (least extent) in the third column;
- if the information exists, provide the area (in ha) in the fourth column
- if this wetland type is used for justifying the application of Criterion 1, indicate if it is representative, rare or unique in the last column
- you can give the local name of the wetland type if different from the Ramsar classification system in the second column

Marine or coastal wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
<no data available>				

Inland wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
Fresh water > Flowing water >> N: Seasonal/intermittent/irregular rivers/streams/creeks	Paroo River	2		Unique
Fresh water > Lakes and pools >> P: Seasonal/intermittent freshwater lakes	Lake Poloko	4		Unique
Fresh water > Lakes and pools >> Tp: Permanent freshwater marshes/pools				
Fresh water > Marshes on inorganic soils >> Ts: Seasonal/intermittent freshwater marshes/pools on inorganic soils	Nocoleche	1		
Fresh water > Marshes on inorganic soils >> W: Shrub-dominated wetlands	Lake Peery	3		
Fresh water > Flowing water >> Y: Permanent Freshwater springs; oases				

Human-made wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
<no data available>				

What non-wetland habitats are within the site?

Other non-wetland habitat

Other non-wetland habitats within the site	Area (ha) if known
unknown	

idem

(EOD) Habitat connectivity

4.3 - Biological components

4.3.1 - Plant species

Other noteworthy plant species

Scientific name	Common name	Position in range / endemism / other
<i>Cyperus difformis</i>	Dirty dora	Found around the artesian mound springs – very rare ecological community
<i>Cyperus gilesii</i>	Sedge	Found around the artesian mound springs – very rare ecological community
<i>Cyperus gymnocaulos</i>	Sedge	Found around the artesian mound springs – very rare ecological community
<i>Cyperus hamulosus</i>	Dwarf sedge	Found around the artesian mound springs – very rare ecological community
<i>Cyperus iria</i>	Sedge	Found around the artesian mound springs – very rare ecological community
<i>Cyperus laevigatus</i>	Sedge	Found around the artesian mound springs – very rare ecological community
<i>Cyperus rotundus</i>	Nutgrass	Found around the artesian mound springs – very rare ecological community
<i>Cyperus squarrosus</i>	Bearded-flat sedge	Found around the artesian mound springs – very rare ecological community
<i>Elatine gratioloides</i>	Waterwort	Mud coloniser in claypans and canegrass swamps – may appear after flooding
<i>Eleocharis acuta</i>	Common spike rush	Found around the artesian mound springs – very rare ecological community
<i>Eleocharis pallens</i>	Pale spike rush	Found around the artesian mound springs – very rare ecological community
<i>Limosella semiensis</i>	Mudwort	Mud coloniser in claypans and canegrass swamps – may appear after flooding
<i>Myriophyllum verrucosum</i>	Miffoil	Maybe found if the waters clear and/or after flooding in black box swamps, lignum swamps and overflow plains
<i>Utricularia dichotoma</i>	Fairy aprons	Found around the artesian mound springs – very rare ecological community

Invasive alien plant species

Scientific name	Common name	Impacts	Changes at RIS update
<i>Carthamus lanatus</i>	Saffron thistle	Potentially	unknown
<i>Heliotropium europæum</i>	Common heliotrope	Potentially	unknown
<i>Opuntia stricta</i>	Prickly pear	Potentially	unknown
<i>Tamarix aphylla</i>	Athol pine	Potentially	unknown
<i>Xanthium spinosum</i>	Bathurst burr	Potentially	unknown

Optional text box to provide further information
(This field is limited to 2500 characters)

4.3.2 - Animal species

Other noteworthy animal species

Phylum	Scientific name	Common name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
CHORDATA/AVES	<i>Acanthiza reguloides</i>	Buff-rumped Thornbill				Conservation concern in western NSW
CHORDATA/AVES	<i>Anhinga melanogaster</i>	Oriental Darter;Darter				Conservation concern in western NSW
CHORDATA/AMPHIBIA	<i>Crinia deserticola</i>	brown toadlet				Conservation concern in western NSW
CHORDATA/AMPHIBIA	<i>Crinia parinsignifera</i>	eastern sign-bearing froglet, plains froglet				Conservation concern in western NSW
CHORDATA/REPTILIA	<i>Ctenotus strauchii</i>	eastern wedgesnout ctenotus				Conservation concern in western NSW
CHORDATA/REPTILIA	<i>Gehyra dubia</i>	northern dtella				Conservation concern in western NSW
CHORDATA/MAMMALIA	<i>Hydromys chrysogaster</i>	Common Water Rat				Conservation concern in western NSW
CHORDATA/AVES	<i>Larus novaehollandiae</i>	silver gull				Conservation concern in western NSW
CHORDATA/AMPHIBIA	<i>Litoria alboguttata</i>	striped burrowing frog				Conservation concern in western NSW
CHORDATA/ACTINOPTERYGII	<i>Macquaria ambigua</i>	golden perch				Conservation concern in western NSW
CHORDATA/AVES	<i>Melithreptus gularis</i>	Black-chinned Honeyeater				Conservation concern in western NSW
CHORDATA/REPTILIA	<i>Morelia spilota variegata</i>	carpet python				Conservation concern in western NSW
CHORDATA/AVES	<i>Pelecanus conspicillatus</i>	Australian Pelican				Conservation concern in western NSW
CHORDATA/AVES	<i>Phalacrocorax carbo</i>	great cormorant				Conservation concern in western NSW
CHORDATA/AVES	<i>Phalacrocorax varius</i>	Australian Pied Cormorant				Conservation concern in western NSW
CHORDATA/AVES	<i>Platalea regia</i>	Royal Spoonbill				Conservation concern in western NSW
CHORDATA/AVES	<i>Podiceps cristatus</i>	Great Crested Grebe				Conservation concern in western NSW

Invasive alien animal species

Phylum	Scientific name	Common name	Impacts	Changes at RIS update
ARTHROPODA/INSECTA	<i>Apis mellifera</i>	honey bee	Actually (major impacts)	No change
CHORDATA/MAMMALIA	<i>Capra hircus</i>	domestic goat	Actually (major impacts)	No change
CHORDATA/MAMMALIA	<i>Felis catus</i>	Domestic Cat	Actually (major impacts)	No change
CHORDATA/MAMMALIA	<i>Sus scrofa</i>	wild boar	Actually (major impacts)	No change
CHORDATA/MAMMALIA	<i>Vulpes vulpes</i>	FOX	Actually (major impacts)	No change

Optional text box to provide further information

(This field is limited to 2500 characters)

4.4 - Physical components

4.4.1 - Climate

Please indicate the prevailing climate type(s) by selecting belowthe climatic region(s) and subregion(s), using the Köppen-Gieger Climate Classification System.

Climatic region	Subregion
B: Dry climate	BWk: Md-latitude desert (Md-latitude desert)

If changing climatic conditions are affecting the site, please indicate the nature of these changes:

(This field is limited to 1000 characters)

The best estimate for climate change impacts by 2030 is for a 3 % reduction in average surface water availability in the Paroo, or about 13 GL/year less water on average (CSIRO, 2007). By 2030, CSIRO suggests there would be only minor changes to the average frequency and total volume of beneficial high flows to the Paroo Overflow Lakes. While average rainfall may be lower under these conditions, an increase in the highest rainfall intensities are estimated and would increase the frequency of the larger floods (CSIRO, 2007). Both the wet and dry extreme predictions for climate change scenarios for 2030 have implications for the volume and frequency of beneficial high flow events to the Paroo Overflow. The dry extreme is likely to be the most detrimental. For this scenario the average period between inflow events would increase by 13 % for the Paroo Overflow Lakes and total inflow volumes would decline by 15 %, which would have significant impacts on the sites ecology (CSIRO, 2007).

4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres)

110

a) Maximum elevation above sea level (in metres)

150

b) Position in landscape/river basin:

Entire river basin

☐

Upper part of river basin

☒

Middle part of river basin

☒

Lower part of river basin

☐

More than one river basin

☐

Not in river basin

☐

Coastal

☐

Please name the river basin or basins. If the site lies in a sub-basin, please also name the larger river basin. For a coastal/marine site, please name the sea or ocean.
(This field is limited to 1000 characters)

Paroo River Wetlands receive bulk of their water from the Paroo and Warrego Rivers (both rivers originate in south-west Queensland), and from local rainfall. The Paroo River is in the mid/upper Murray-Darling Basin.:

4.4.3 - Soil

Mneral

☒

(Update) Changes at RIS update

No change

☒

Increase

☐

Decrease

☐

Unknown

☐

Organic

☐

(Update) Changes at RIS update

No change

☒

Increase

☐

Decrease

☐

Unknown

☐

No available information

☐

Are soil types subject to change as a result of changing hydrological conditions (e.g., increased salinity or acidification)?

Yes

☐

No

☒

Please provide further information on the soil (optional)

(This field is limited to 1000 characters)

4.4.4 - Water regime

Water permanence

Presence?	Changes at RIS update
Usually permanent water present	
Usually seasonal, ephemeral or intermittent water present	

Source of water that maintains character of the site

Presence?	Predominant water source	Changes at RIS update
Water inputs from groundwater	<input checked="" type="checkbox"/>	No change
Water inputs from rainfall	<input checked="" type="checkbox"/>	No change
Water inputs from surface water	<input checked="" type="checkbox"/>	No change

Water destination

Presence?	Changes at RIS update
Feeds groundwater	unknown

Stability of water regime

Presence?	Changes at RIS update
Water levels fluctuating (including tidal)	unknown

Please add any comments on the water regime and its determinants (if relevant). Use this box to explain sites with complex hydrology.
(This field is limited to 2000 characters)

The Paroo River flows through extensive floodplains before reaching the network of channels and wetlands known as the Paroo Overflow. Note that wetlands in the lower section of this catchment can also receive flows from the neighbouring Warrego River and during very high flows in the Darling River, water can also move from the Darling River into the Paroo River. Wetlands in the Nocolleche NR depend mainly on flows from the Paroo River (and local rainfall); Peery and Poloko lakes rely predominantly on flows from the Paroo River and fill after other overflow lakes further north are flooded, also from local rainfall, and from (permanent) artesian springs.

Waters in the Peery system can only leave through evaporation or when it overflows. Flow variability is complex; a combination of frequency (how often filling and drying occurs), timing (when water is present), duration (period of inundation), extent and depth, and the variability over time of flooding.

(ECD) Connectivity of surface waters and of groundwater	The underlying bedrock of Peery and Poloko lakes prevents floodwater or rainwater from infiltrating the ground. Water flows from artesian springs into Peery Lake.
(ECD) Stratification and mixing regime	

4.4.5 - Sediment regime

Significant erosion of sediments occurs on the site ☐

(Update) Changes at RIS update No change ☒ Increase ☐ Decrease ☐ Unknown ☐

Significant accretion or deposition of sediments occurs on the site ☐

(Update) Changes at RIS update No change ☐ Increase ☐ Decrease ☐ Unknown ☒

Significant transportation of sediments occurs on or through the site ☐

(Update) Changes at RIS update No change ☐ Increase ☐ Decrease ☐ Unknown ☒

Sediment regime is highly variable, either seasonally or inter-annually ☐

(Update) Changes at RIS update No change ☒ Increase ☐ Decrease ☐ Unknown ☐

Sediment regime unknown ☐

Please provide further information on sediment (optional):

(This field is limited to 1000 characters)

During floods large amounts of sediments (and nutrients) are deposited onto the floodplains (including into wetland systems) – increasing fertility of the floodplains and improving water quality in the river. Turbidity can range from high in the claypans, river channels and waterholes, and freshwater lakes, to moderate to low in black box, Eleocharis and lignum swamps, and low around the artesian springs

(ECD) Water turbidity and colour	Turbidity: Low<100 FTU, medium>100 FTU and high>1000 FTU.
(ECD) Light - reaching wetland	Turbidity in wetlands in the Paroo River Wetlands Ramsar site determines the depth distribution of plant species.
(ECD) Water temperature	Water discharged into Peery Lake from the artesian springs is moderate to high in temperature (20–45°C).

4.4.6 - Water pH

Acid (pH<5.5) ☐

(Update) Changes at RIS update No change ☒ Increase ☐ Decrease ☐ Unknown ☐

Circumneutral (pH: 5.5-7.4) ☐

(Update) Changes at RIS update No change ☒ Increase ☐ Decrease ☐ Unknown ☐

Alkaline (pH>7.4) ☐

(Update) Changes at RIS update No change ☒ Increase ☐ Decrease ☐ Unknown ☐

Unknown ☒

Please provide further information on pH (optional):

(This field is limited to 1000 characters)

Close to neutral pH - claypans, river channels and water holes
Weakly alkaline - black box, Eleocharis and lignum swamps, and artesian springs
Alkaline - freshwater lakes

4.4.7 - Water salinity

Fresh (<0.5 g/l) ☒

(Update) Changes at RIS update No change ☒ Increase ☐ Decrease ☐ Unknown ☐

Mxohaline (brackish)/Mxosaline (0.5-30 g/l) ☒

(Update) Changes at RIS update No change ☒ Increase ☐ Decrease ☐ Unknown ☐

Euhaline/Eusaline (30-40 g/l) ☐

(Update) Changes at RIS update No change ☒ Increase ☐ Decrease ☐ Unknown ☐

Hyperhaline/Hypersaline (>40 g/l) ☐

(Update) Changes at RIS update No change ☒ Increase ☐ Decrease ☐ Unknown ☐

Unknown ☐

Please provide further information on salinity (optional):

(This field is limited to 1000 characters)

Claypans, river channels and water holes, artesian springs and freshwater lakes have low (< 2000 µS/cm) salinity (the latter increases on drying); black box, Eleocharis and lignum swamps have moderate (~5000 µS/cm) salinity

(ECD) Dissolved gases in water
(This field is limited to 1000 characters)

4.4.8 - Dissolved or suspended nutrients in water

Eutrophic

(Update) Changes at RIS update

No change
☒
Increase
☐
Decrease
☐
Unknown
☐

Mesotrophic

(Update) Changes at RIS update

No change
☒
Increase
☐
Decrease
☐
Unknown
☐

Oligotrophic

(Update) Changes at RIS update

No change
☒
Increase
☐
Decrease
☐
Unknown
☐

Dystrophic

(Update) Changes at RIS update

No change
☒
Increase
☐
Decrease
☐
Unknown
☐

Unknown

☒

Please provide further information on dissolved or suspended nutrients (optional):

(This field is limited to 1000 characters)

Flooding releases and transports nutrients that drive food webs – this is the main abiotic determinant of the structure and composition of aquatic plant, invertebrate, fish and waterbird communities in the system. Nutrients include phosphorus, nitrogen, potassium, sodium, magnesium, calcium, and trace elements such as iron, manganese, copper, zinc and silicon.

(ECD) Dissolved organic carbon	Dissolved organic carbon is identified as a major chemical ecosystem component (Kingsford, R.T. and Lee, E. 2010).
(ECD) Redox potential of water and sediments	The redox potential of water and sediments is identified as a major chemical ecosystem component (Kingsford, R.T. and L
(ECD) Water conductivity	

4.4.9 - Features of the surrounding area which may affect the Site

Please describe whether, and if so how, the landscape and ecological characteristics in the area surrounding the Ramsar Site differ from the
i) broadly similar
☒
ii) significantly different
☐
site itself:

If the surrounding area differs from the Ramsar Site, please indicate how: (Please tick all categories that apply)

- Surrounding area has greater urbanisation or development

☐
- Surrounding area has higher human population density

☐
- Surrounding area has more intensive agricultural use

☐
- Surrounding area has significantly different land cover or habitat types

☐

Please describe other ways in which the surrounding area is different:

(This field is limited to 2000 characters)

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Please select below all relevant ecosystem services/benefits currently provided by the site and indicate their relative importance in the right-hand column.

Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Food for humans	Sustenance for humans (e.g., fish, molluscs, grains)	Low
Fresh water	Drinking water for humans and/or livestock	Medium

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Maintenance of hydrological regimes	Groundwater recharge and discharge	High
Erosion protection	Soil, sediment and nutrient retention	Medium
Pollution control and detoxification	Water purification/waste treatment or dilution	
Hazard reduction	Flood control, flood storage	Medium

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Picnics, outings, touring	Low
Recreation and tourism	Recreational hunting and fishing	Low
Recreation and tourism	Nature observation and nature-based tourism	Low
Spiritual and inspirational	Cultural heritage (historical and archaeological)	High
Spiritual and inspirational	Contemporary cultural significance, including for arts and creative inspiration, and including existence values	High
Spiritual and inspirational	Spiritual and religious values	High
Spiritual and inspirational	Aesthetic and sense of place values	High
Scientific and educational	Important knowledge systems, importance for research (scientific reference area or site)	
Scientific and educational	Educational activities and opportunities	Medium

Supporting Services

Ecosystem service	Examples	Importance/Extent/Significance
Biodiversity	Supports a variety of all life forms including plants, animals and microorganisms, the genes they contain, and the ecosystems of which they form a part	High
Soil formation	Sediment retention	Medium
Soil formation	Accumulation of organic matter	Medium
Nutrient cycling	Storage, recycling, processing and acquisition of nutrients	High
Nutrient cycling	Carbon storage/sequestration	Low
Pollination	Support for pollinators	Medium

Optional text box to provide further information

(This field is limited to 2500 characters)

Wetlands in the Paroo River catchment are important to Aboriginal people for their traditional, spiritual and cultural values. The Paroo River Wetlands are particularly important to the Baakandji people due to their significant role in the regional system of ‘dreaming tracks’. Aboriginal people believe that ancestral beings, such as Kuluwirru (a big fellow) and the two Ngyati (water serpents), travelled through the area, creating many of the landscape features including boulders, rivers, lakes and the springs. Some of the areas created by Kuluwirru are important as law enforcement sites to punish tribal members for unacceptable social behaviour (Wharton 2000). Although the traditional lifestyles of the Aboriginal people were disrupted by the arrival of graziers, there was no government interference until the 1930s, and traditional ceremonies continued to be held in the Paroo River catchment until at least the 1930s. Thus, many present-day Budjiti and Baakandji retain a strong affiliation with their country and maintain a strong oral history of the region (RIS 2007). The Paroo River Wetlands Ramsar site contains a significant numbers of Aboriginal artefacts such as ground stone artefacts, stone tools and stone arrangements (NPWS 2000, 2012) (Kingsford and Lee 2010).

Other ecosystem service(s) not included above:

(This field is limited to 2000 characters)

Please make a rough estimate of the approximate number of people who directly benefit from the ecological services provided by this site (estimate at least in orders of magnitude: 10s, 100s, 1000s, 10 000s etc.):

Within the site:

100s

Outside the site:

1000s

Have studies or assessments been made of the economic valuation of ecosystem services provided by this Ramsar Site?
Yes
No
Unknown

Where economic studies or assessments of economic valuation have been undertaken at the site, it would be helpful to provide information on where the results of such studies may be located (e.g. website links, citation of published literature):

(This field is limited to 2500 characters)

4.5.2 - Social and cultural values

Is the site considered internationally important for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? If so, please describe this importance under one or more of the four following categories. You should not list here any values derived from non-sustainable exploitation or which result in detrimental ecological changes.

- i) the site provides a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland

☒

Description if applicable

(This field is limited to 2500 characters)

Near natural state (Paroo River unregulated)

- ii) the site has exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland

☐

Description if applicable

(This field is limited to 2500 characters)

Important for traditional owners (Budjiti, Kunja, Mardgany and Baakandji (Paruntji) people) – occupation for at least 14,000 years 23, 24

iii) the ecological character of the wetland depends on its interaction with local communities or indigenous peoples ☐

Description if applicable

(This field is limited to 2500 characters)

Traditional owners

iv) relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland ☐

Description if applicable

(This field is limited to 2500 characters)

Significant to Aboriginal people for their traditional, spiritual, cultural and contemporary values (Baakandji 'dreaming tracks' – ancestral beings travelled through the area, creating many of the landscape features (boulders, rivers, lakes and springs).

4.6 - Ecological processes

This section is not intended for completion as part of a standard RIS, but is included for completeness as part of the agreed format of a 'full' Ecological Character Description (ECD) outlined by Resolution X.15

(ECD) Primary production	
(ECD) Nutrient cycling	Soil: Flooding- pulse of nutrients, sedimentation; drying- nutrients lock up, soils crack. Microorganisms process nutrients and organic matter on flooding; on drying change from anaerobic to aerobic forms, resistant stages.
(ECD) Carbon cycling	
(ECD) Animal reproductive productivity	On flooding, waterbirds, amphibians and zooplankton breed/reproduce. On drying, amphibians lay briefly resistant eggs in riparian vegetation; and zooplankton and benthic invertebrates propagule bank of resistant eggs.
(ECD) Vegetational productivity, pollination, regeneration processes, succession, role of fire, etc.	Aquatic plants: on flooding- germinate, grow and reproduce; on drying- seed bank of resistant spores.
(ECD) Notable species interactions, including grazing, predation, competition, diseases and pathogens	On flooding of wetlands birds of prey feed on small mammals; on drying of wetland, birds disperse to areas with greater prey resources. The Freshwater Yabbie (Cherax destructor) likely plays an important role in the trophic web within these systems.
(ECD) Notable aspects concerning animal and plant dispersal	
(ECD) Notable aspects concerning migration	Birds, mammals and reptiles: move between dry areas and wetland for water and food supply; on drying of wetland, some species move to find food; others remain in dry country.
(ECD) Pressures and trends concerning any of the above, and/or concerning ecosystem integrity	A major issue in the Great Artesian Basin is the sustainable use of its groundwater resources. Loss of groundwater pressure can lead to reduced flows to artesian springs.

5 - How is the Site managed? (Conservation and management)

5.1 - Land tenure and responsibilities (Managers)

5.1.1 - Land tenure/ownership

Public ownership

Category	Within the Ramsar Site	In the surrounding area
Other public ownership	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Provincial/region/state government	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Local authority, municipality, (sub)district, etc.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Private ownership

Category	Within the Ramsar Site	In the surrounding area
Commercial (company)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Other

Category	Within the Ramsar Site	In the surrounding area
<no data available>		

Provide further information on the land tenure / ownership regime (optional):

(This field is limited to 1000 characters)

Surrounding lands are Western Lands Leases (State Government), leased to pastoralists for grazing purposes; also includes travelling stock routes (TSR) on Crown lands – rights of passage – administered by NSW Rural Lands Protection Board (State Government).

5.1.2 - Management authority

Please list the local office / offices of any agency or organization responsible for managing the site:

(This field is limited to 1000 characters)

Nocoleche Nature Reserve
NSW National Parks & Wildlife Service
Far West Region
183 Argent Street
BROKEN HILL NSW 2880

Provide the name and title of the person or people with responsibility for the wetland:

A/Manager, Bourke Area Andrew Wall and Manager, West Darling Area John Holcombe

Postal address:

(This field is limited to 1000 characters)

PO Box 788
BROKEN HILL NSW 2880

E-mail address:

andrew.wall@environment.nsw.gov.au

5.2 - Ecological character threats and responses (Management)

5.2.1 - Factors (actual or likely) adversely affecting the Site's ecological character

Human settlements (non agricultural)

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
<no data available>						

Water regulation

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Water abstraction		Medium impact	<input type="checkbox"/>	No change	<input checked="" type="checkbox"/>	unknown

Agriculture and aquaculture

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Livestock farming and ranching			<input type="checkbox"/>		<input checked="" type="checkbox"/>	

Energy production and mining

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
<no data available>						

Transportation and service corridors

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
<no data available>						

Biological resource use

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Fishing and harvesting aquatic resources	Low impact	Medium impact	<input checked="" type="checkbox"/>	unknown	<input checked="" type="checkbox"/>	unknown

Human intrusions and disturbance

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
<no data available>						

Natural system modifications

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
<no data available>						

Invasive and other problematic species and genes

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Invasive non-native/ alien species		unknown impact	<input type="checkbox"/>	unknown	<input checked="" type="checkbox"/>	unknown

Pollution

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
<no data available>						

Geological events

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
<no data available>						

Climate change and severe weather

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Habitat shifting and alteration		High impact	<input checked="" type="checkbox"/>	unknown	<input checked="" type="checkbox"/>	unknown
Droughts		High impact	<input checked="" type="checkbox"/>	unknown	<input checked="" type="checkbox"/>	unknown

Please describe any other threats (optional):

(This field is limited to 3000 characters)

This Ramsar site is an example of a near natural, arid, inland wetland system; There are no major diversions, dams or weirs, and the pattern of water flow, particularly the extent and duration of flooding and drying of the river and its natural drainage features, remains as a natural regime – this important for the maintenance of biological diversity. Therefore, the greatest perceived threats are: changes in flooding patterns and climate change, followed by introduced flora and fauna, and fire. Increased water resource development within the Warrego catchment could subsequently affect flows down Cuttaburra Creek that can feed the Ramsar (Nocoleche) wetlands.

5.2.2 - Legal conservation status

Please list any other relevant conservation status, at global, regional or national level and specify the boundary relationships with the Ramsar Site:

Global legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
<no data available>			

Regional (international) legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
<no data available>			

National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
National Park			whole
State Protected Area (NSW)"	Nocoleche Nature Reserve		whole

Non-statutory designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
<no data available>			

5.2.3 - IUCN protected areas categories (2008)

Ia Strict Nature Reserve ☒

Ib Wilderness Area: protected area managed mainly for wilderness protection ☐

II National Park: protected area managed mainly for ecosystem protection and recreation ☒

III Natural Monument: protected area managed mainly for conservation of specific natural features ☐

IV Habitat/Species Management Area: protected area managed mainly for conservation through management intervention ☐

V Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation ☐

VI Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems ☐

5.2.4 - Key conservation measures

Legal protection

Measures	Status
Legal protection	Implemented

Habitat

Measures	Status
Catchment management initiatives/controls	Implemented
Hydrology management/restoration	Partially implemented

Species

Measures	Status
Control of invasive alien plants	Partially implemented
Control of invasive alien animals	Partially implemented

Human Activities

Measures	Status
Livestock management/exclusion (excluding fisheries)	Partially implemented
Harvest controls/poaching enforcement	Implemented
Regulation/management of wastes	Implemented
Communication, education, and participation and awareness activities	Implemented
Research	Implemented

Other:

(This field is limited to 3000 characters)

In Australia, the ecological character of Ramsar sites is protected as a Matter of National Environmental Significance under the Environmental Protection and biodiversity Conservation Act 1999.

5.2.5 - Management planning

Is there a site-specific management plan for the site? In preparation

Is the management plan/planning implemented? Yes ☐ No ☒

The management plan covers

Is the management plan currently subject to review and update? Yes ☐ No ☒

Has a management effectiveness assessment been undertaken for the site? Yes ☐ No ☒

Please give link to site-specific plan or other relevant management plan if this is available via the Internet or upload it in section 'Additional material':

(This field is limited to 500 characters)

If the site is a formal transboundary site as indicated in section Data

and location > Site location, are there shared management planning Yes ☐ No ☒

processes with another Contracting Party?

Please indicate if a Ramsar centre, other educational or visitor facility, or an educational or visitor programme is associated with the site:

(This field is limited to 1000 characters)

Visitors Centre (outside the Ramsar site due to the remote location and restricted access to some parts of the site) – for educational and tourism purposes.

URL of site-related webpage (if relevant): <http://www.environment.nsw.gov.au/wetlands/ParooRiverRamsar.htm>

5.2.6 - Planning for restoration

Is there a site-specific restoration plan? No, but a plan is being prepared

Has the plan been implemented? Yes ☐ No ☒

The restoration plan covers: All of Ramsar Site

Is the plan currently being reviewed and updated? Yes ☐ No ☒

Where the restoration is being undertaken to mitigate or respond to a threat or threats identified in this RIS, please indicate it / them:

(This field is limited to 1000 characters)

Further information

(This field is limited to 2500 characters)

NA

5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Water regime monitoring	Proposed
Animal species (please specify)	Implemented
Birds	Proposed
Plant species	Proposed

Please indicate other monitoring activities:

(This field is limited to 3000 characters)

Monitoring to allow benchmarking/setting limits of acceptable change (to be established);
Ongoing monitoring of birds as part of larger bird study (Eastern Water Bird Survey)
Monitoring of threats (to allow assessment of whether management actions for reducing the impacts of threats are effective in maintaining the ecological character.

Weed control programs are run annually within Sturt National Park. The majority of weed spraying, particularly of Noogoora burr occurs in late summer. Future monitoring of Noogoora weed is proposed for within the Ramsar site.

pest monitoring in and around the site includes; feral pigs, fox, goats, cats and dogs.

6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references

(This field is limited to 3000 characters)

Refer to Attachment 1, in published literature attachments, as cannot fit in word limit.

6.1.2 - Additional reports and documents

i. taxonomic lists of plant and animal species occurring in the site (see section 4.3)

 [AU1716_taxo171219.docx](#)

ii. a detailed Ecological Character Description (ECD) (in a national format)

 [AU1716ECD.pdf](#)

iii. a description of the site in a national or regional wetland inventory

<no file available>

iv. relevant Article 3.2 reports

<no file available>

v. site management plan

<no file available>

vi. other published literature

 [AU1716_lit191121.docx](#)

Please note that any documents uploaded here will be made publicly available.

6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:



Paroo Mound Spring (Mark
Richardson/OEH, 12-12-
2016)



Paroo Mound Spring (Nail
Foster/OEH, 10-01-17)

6.1.4 - Designation letter and related data

Designation letter

<no file available>

Date of Designation 2007-09-13