

Native Vegetation Clearance

SAWater Copely Lyndhurst Water Pipeline

Data Report

Clearance under the *Native Vegetation Regulations*
2017

March 13 2021

Prepared by Anne Brown Greening Australia



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Table of contents

1. Application information
2. Purpose of clearance
 - 2.1 Description
 - 2.2 Background
 - 2.3 General location map
 - 2.4 Details of the proposal
 - 2.5 Approvals required or obtained
 - 2.6 Native Vegetation Regulation
 - 2.7 Development Application information (if applicable)
3. Method
 - 3.1 Flora assessment
 - 3.2 Fauna assessment
4. Assessment outcomes
 - 4.1 Vegetation assessment
 - 4.2 Threatened Species assessment
 - 4.3 Cumulative impacts
 - 4.4 Addressing the Mitigation hierarchy
 - 4.5 Principles of clearance
 - 4.6 Risk Assessment
 - 4.7 NVC Guidelines
5. Clearance summary
6. Significant environmental benefit
7. Appendices
 - 7.1 Fauna Survey (where applicable)
 - 7.2 Rangeland Vegetation Assessment Scoresheets (submitted in Excel format).
 - 7.3 Flora Species List
 - 7.4 Shape files

1. Application information

Application Details

Applicant:	SAWater		
Key contact:	Melissa Peake		
Landowner:			
Site Address:	Outback Highway Lyndhurst to Copley		
Local Government Area:	OOA	Hundred:	
Title ID:	CT CR CL	Parcel ID	Sec DP A/Q FP A/Q

Summary of proposed clearance

Purpose of clearance	To enable installation of Water supply pipeline.
Native Vegetation Regulation	Regulation 12(34) Infrastructure
Description of the vegetation under application	Vegetation varies across the 34kms of roadside. The dominant vegetation association is <i>Maireana pyramidata</i> low open shrubland. Creek crossings are dominated by <i>Acacia victoriae</i> tall open shrubland.
Total proposed clearance - area (ha) and number of trees	26.79ha
Level of clearance	Level 4 due to escalating matters
Overlay (Planning and Design Code)	N/A
Mitigation hierarchy	The pipeline corridor has been designed to avoid significant vegetation wherever possible.
SEB Offset proposal	Payment of \$41,280.73 (incl admin fee)
Map of proposed clearance area (show as a minimum; property boundary and proposed clearance area)	

MAP TITLE:
Vegetation Descriptions,
Copley to Lyndhurst
Pipeline Proposal

Overview

Updated 04/03/21

Vegetation Description

- Acacia victoriae tall shrubland.
Medium quality.
- Bare Ground
- Maireana pyramidata open
shrubland. Medium quality.
- Maireana pyramidata open
shrubland. Poor quality.
- Nitraria billardierei shrubland.
Medium quality.
- Tecticornia spp. low shrubland.
Medium quality.
- Assessment Sites

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0 1.5 3 km



MAP TITLE:
Vegetation Descriptions,
Copley to Lyndhurst
Pipeline Proposal

Northern

Updated 04/03/21

Vegetation Description

- Acacia victoriae tall shrubland.
Medium quality.
- Bare Ground
- Maireana pyramidata open
shrubland. Medium quality.
- Maireana pyramidata open
shrubland. Poor quality.
- Nitraria billardierei shrubland.
Medium quality.
- Tecticornia spp. low shrubland.
Medium quality.
- Assessment Sites



Produced by Greening Australia
 October 2020

0 1 2 km



Source: Esri, Maxar, GeoEye, Earthstar
 Geographics, CNES/Airbus DS, USDA, USGS,
 AeroGRID, IGN, and the GIS User Community

MAP TITLE:
Vegetation Descriptions,
Copley to Lyndhurst
Pipeline Proposal

Southern

Updated 04/03/21

Vegetation Description

- Acacia victoriae tall shrubland.
Medium quality.
- Bare Ground
- Maireana pyramidata open
shrubland. Medium quality.
- Maireana pyramidata open
shrubland. Poor quality.
- Nitraria billardierei shrubland.
Medium quality.
- Tecticornia spp. low shrubland.
Medium quality.

● Assessment Sites

Produced by Greening Australia
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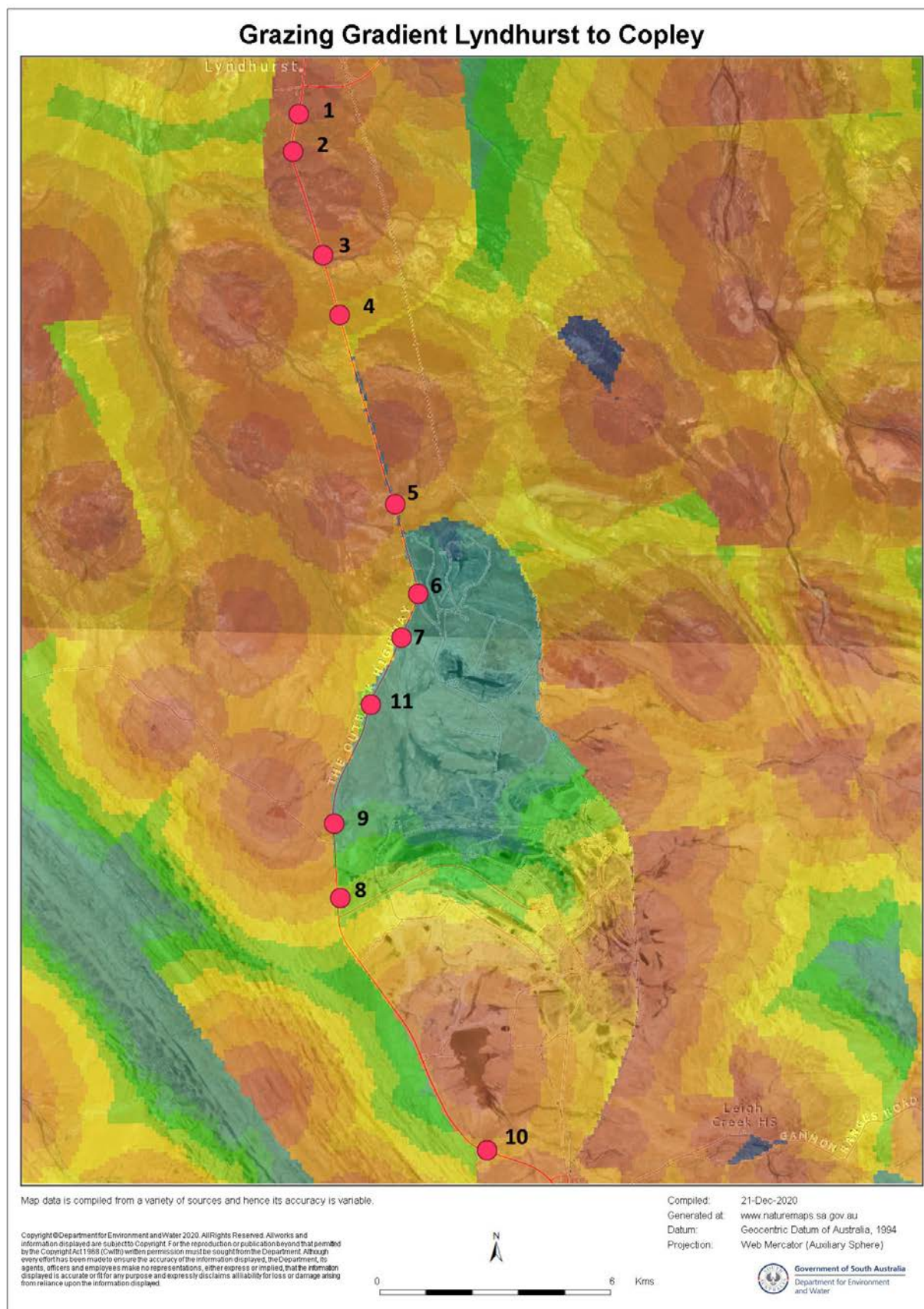
0 1 2 km

Greening Australia



Source: Esri, Maxar, GeoEye, Earthstar
 Geographics, CNES/Airbus DS, USDA, USGS,
 AeroGRID, IGN, and the GIS User Community

Map 5 Grazing gradient Sept 20 Site locations



2.4 Details of the proposal

SAWater must supply water to the township of Lyndhurst. The existing line passes through the Leigh Creek Mine site and this is no longer safe to maintain. A new pipeline is proposed between Copley, Northfield and Lyndhurst. This proposal includes 24 kms of pipeline and two Pressure relieving valves. This pipeline will be installed within the roadside corridor to the east of the Outback Highway between Copley and Lyndhurst.

The vegetation survey has informed the final location of the pipeline in that corridor and extent of clearance required for the construction.

Initially a 15m wide corridor from the edge of the bitumen surface, was surveyed. This showed that the first 5m contained the majority of the vegetation due to water runoff from the bitumen. The pipeline will now be designed beyond this zone in a 10m wide corridor avoiding significant vegetation wherever possible. All laydowns and access points were surveyed in areas of little or no vegetation. The initial vegetation assessment surveyed a further 3 kms towards Lyndhurst but this section will now not be renewed.

Maps 3-5

Shape files accompany report

2.5 Approvals required or obtained

SAWater will address the requirements of The Native Vegetation Act 1991, the National Parks and Wildlife Act 1972 and the Environment Protection and Biodiversity Conservation Act 1999 in the application associated with this data report. There have been no previous Native Vegetation Clearance approvals received for this project site.

Requirements under further Acts are as follows-

- Planning, Development and Infrastructure Act 2016 – No DA required due to the local nature of the project (servicing 20 Households)
- Water Resources Act 1997 Works are exempt.
- Landscapes SA A water affecting activity permit will be applied for the final design at creek crossings.
- Aboriginal Heritage Act 1988. An assessment has been undertaken and based on SAW assessment process and their Standard Operating Procedures apply. No sites have been identified.

2.6 Native Vegetation Regulation

Division 5, Regulation 12, clause 34 Infrastructure. Water supply.

2.7 Development Application information (if applicable)

Not Applicable

3. Method

3.1 Flora assessment

The Proposed clearance is located in the South Australian Arid Lands therefore the Vegetation was assessed using the Rangelands Assessment Method (2020).

The assessment covered a 34 km stretch of roadside adjacent to the Outback Highway between Copley and Lyndhurst.

The assessment was carried out by Accredited Consultant Anne Brown, assisted by Millie Nicholls.

Site Selection was a complex exercise and included assessment of the Grazing Gradient, the IBRA Sub-regional boundaries, the landforms and the existing vegetation. Map 1

Desktop Searches.

Searches of Flora data bases on Nature Maps and the Atlas of Living Australia identified a list of State and Nationally listed species expected to occur within a 50km radius of the pipeline midpoint. Table 1

Site inspections occurred between September 2 and 5, 2020. The site was inspected for 6 hours to locate the first 7 sites and a further 3 days was spent assessing the vegetation variation and condition and adding 4 more sites. This resulted in 11 sites being assessed along the 34 km corridor. The roadside was also stratified to match the condition of the corresponding assessment site.

A second site visit was run in February 2021, with the pipeline designers and construction engineers to determine the final construction corridor. This included all laydowns, access points and pipeline location. The length of pipeline to be replaced was reduced at this time. The vegetation condition was reassessed to measure any changes at this time. This redesign enabled the assessment to exclude the more diverse vegetation occupying the 10m immediately adjacent to the bitumen. Site 8 on a rock bar was bypassed and site 11 no longer represented vegetation to be cleared.

The Rangeland assessment method is difficult to use for a very narrow clearance site, but each site was traversed on foot for a minimum of 100m, dependent on the vegetation extent and variability.

No significant rainfall had fallen at the site in the 6 months prior to the first site visit and the area was under significant drought stress. This had resulted in limited species diversity and many plants were in poor condition.

Rain fell in October, but this has had no significant impact on the vegetation condition at the February inspection.

No species listed under the NP&W 1972 or the EPBC Act 1999 were located along the narrow construction corridor. Special attention was taken of locations where these species were expected to occur, such as the salty drainage lines for *Frankenia*.

3.2 Fauna assessment

Data base and Protected Matters searches indicated a long list of possible species. The impacted vegetation occupied plains and creek beds in the Murnpeowie IBRA sub region and plains, creeks and one small rocky outcrop in the Northern Flinders sub region. The 50 km search zone brought in species from the rugged Flinders such as the Yellow footed Rock Wallaby and water birds that use the large water bodies in the mine site. Discussions with Sharon Gillam at the Native Vegetation Branch enabled these to be removed from the list of species that may be impacted by the clearance.

The dry weather and lack of surface water led to few birds being identified during the survey. Zebra finches were seen in February.

4. Assessment Outcomes

4.1 Vegetation Assessment

General description of the vegetation, the site and matters of significance

The pipeline construction zone runs parallel to the Outback Highway between Copley and Lyndhurst in the North of South Australia.

The corridor runs through undulating plains between the Northern Flinders Ranges and Lake Torrens, crossing many small floodways and creeks that flow northwards towards Lake Eyre. The soils are generally poor yellow clays and loams with little topsoil remaining on large areas of stony plain. Low lying areas are saline where drainage is poor, as is the Leigh Creek. The other ephemeral waterways are fresh and contain *Acacia victoriae* shrublands.

Only one small rock bar is crossed, and scattered rock is found at the edge of the Northern Flinders IBRA Association. The main vegetation association is a Low *Maireana pyramidata* shrubland that has been heavily impacted by grazing and drought. Taller *Acacia* shrublands occur along the waterways. The grazing gradient indicated in Map 7 was not obvious along the road edge for most of the pipeline's alignment with the condition being consistent south of the main floodway. There are many areas of disturbance caused by past construction, mining, and vehicle movements along the roadway.

The construction corridor has been placed to cause minimal vegetation disturbance by avoiding the immediate roadside, which is influenced by runoff from the bitumen surface, laydowns and access points were placed in areas of poor vegetation or bare soil to reduce impacts.

The initial assessment included 4 sites north of the final design and Site 8 which was bypassed due to rock and 11 was no longer representative of the vegetation that the pipeline passed through. An extra site 1990 was added to assess medium quality Shrubland.

The site will be rehabilitated following construction to encourage regeneration of the low shrublands. The long-term impact of the clearance is expected to be low.

Details of the vegetation associates proposed to be impacted.

Site No	Start of pipeline placement				
Vegetation Association	Bare ground for pipeline				
Yellow on map					
Date/Time: 2021-02-09 14:25:30+10:30 Location: 247422 6636319 ± 4 m GDA94 Altitude: 172 m ± 5 m Direction: 172 deg(T) Address: The Outback Highway Lyndhurst SA 5731 AU Spp 					
General description	This is typical of the first section of pipeline placement. The only vegetation present is in the gutter adjacent to the road. Past construction and traffic have removed all perennial vegetation.				
Threatened species or community	None				
Landscape context score		Vegetation Condition Score		Conservation significance score	
Unit biodiversity Score		Area (ha)		Total biodiversity Score	0

Site No	5
Vegetation Association	Tecticornia sp low open shrubland

Orange on Map

Date/Time: 2021-02-09 14:37:13+10:30
 Location: 247701 6635484 ± 6 m GDA94
 Altitude: 165 m ± 7 m
 Direction: 154 deg(T)
 Address: The Outback Highway Lyndhurst SA 5731 AU
 Spp



Date/Time: 2021-02-10 07:39:33+10:30
 Location: 248226 6633756 ± 24 m GDA94
 Altitude: 160 m ± 6 m
 Direction: 165 deg(T)
 Address: The Outback Highway Lyndhurst SA 5732 AU
 Spp



Good quality Samphire

General description	This is a low lying area that is saline divided by a narrow creekline occupied by <i>Acacia victoriae</i> and <i>Pittosporum angustifolium</i> . The saline area is dominated by <i>Tecticornia disarticulata</i> and a search was made here for rare <i>Frankenia subtreres</i> and <i>F cupularis</i> , but only <i>F serpyllifolia</i> was found.				
Threatened species or community	None located				
Landscape context score	1.17	Vegetation Condition Score	36.50	Conservation significance score	1.10
Unit biodiversity Score	46.98	Area (ha)	0.92	Total biodiversity Score	43.22

Site No	Site 6				
Vegetation Association	Maireana pyramidata low shrubland poor condition				
Pale Blue on map					
Date/Time: 2020-09-04 14:31:12+09:30 Location: -30°24.667' +138°22.914' ± 12 m GDA94 Altitude: 169 m ± 6 m Direction: 189 deg(T) Address: The Outback Highway Lyndhurst SA 5732 AU Site 6 					
General description	Site is very bare except for road edge and gutter running adjacent to road. Shrubs are dominated by <i>Maireana pyramidata</i> . All are impacted by grazing in the past				
Threatened species or community	No threatened species or community was identified				
Pale blue on map					
Landscape context score	1.15	Vegetation Condition Score	41.88	Conservation significance score	1.10
Unit biodiversity Score	52.97	Area (ha)	7.83	Total biodiversity Score	414.77

Site No	7
Vegetation Association	Nitraria billardiarei/ Maireana pyramidata low shrubland

Purple on map



1 February

General description	This floodout roadside is dominated by <i>Nitraria billardierei</i> and <i>Atriplex vesicaria</i> with small areas of <i>Maireana</i> sp. It is in good condition on the ungrazed eastern side of the highway.				
Threatened species or community	No threatened species were found in this community.				
Landscape context score	1.17	Vegetation Condition Score	58.36	Conservation significance score	1.10
Unit biodiversity Score	75.11	Area (ha)	1.14	Total biodiversity Score	85.62

Site No	Site 9				
Vegetation Association	Acacia victoriae tall open shrubland- Creek lines				
Green on map					
Date/Time: 2020-09-05 11:24:19+09:30 Location: -30°28.015' +138°21.495' ± 5 m GDA94 Altitude: 199 m ± 7 m Direction: 181 deg(T) Address: The Outback Highway Lyndhurst SA 5732 AU Site 9 creek& plain 					
General description	Site is very bare except for road edge and gutter running adjacent to road. Shrubs are dominated by <i>Maireana pyramidata</i> . All are impacted by grazing in the past. The shrub component improves within the creek line				
Threatened species or community	No threatened species or community was identified				
Landscape context score	1.17	Vegetation Condition Score	53.44	Conservation significance score	1.10
Unit biodiversity Score	68.77	Area (ha)	3.0	Total biodiversity Score	206.32

Site No	10
Vegetation Association	Maireana pyramidata low open shrubland Poor condition
Pale Blue Northern Flinders	
Date/Time: 2020-09-03 17:25:57+09:30 Location: -30°32.758' +138°24.056' ± 5 m GDA94 Altitude: 235 m ± 6 m Direction: 110 deg(T) Address: The Outback Highway Copley SA 5732 AU 1 Gibber Copley 	
Date/Time: 2020-09-05 10:29:59+09:30 Location: -30°32.769' +138°24.078' ± 3 m GDA94 Altitude: 233 m ± 5 m Direction: 119 deg(T) Address: The Outback Highway Copley SA 5732 AU 	

General description	Site is very bare except for road edge and gutter running adjacent to road. Shrubs are dominated by <i>Maireana pyramidata</i> . All are impacted by grazing in the past				
Threatened species or community	No threatened species or community was identified				
Landscape context score	1.15	Vegetation Condition Score	36.21	Conservation significance score	1.10
Unit biodiversity Score	45.8	Area (ha)	12.53	Total biodiversity Score	573.92

Site No	1990				
Vegetation Association	Maireana pyramidata low shrubland Medium quality				
Dark blue on map					
					
General description	Site is very bare except for road edge and gutter running adjacent to road. Shrubs are dominated by <i>Atriplex vesicaria</i> . The site is predominantly covered with <i>Gibber stones</i> .				
Threatened species or community	No threatened species or community was identified				
Site is located just south of Site 6					
Landscape context score	1.17	Vegetation Condition Score	48.25	Conservation significance score	1.10
Unit biodiversity Score	62.10	Area (ha)	1.37	Total biodiversity Score	85.08

Site map showing areas of proposed impact

Map 6 Vegetation types

MAP TITLE: Vegetation Descriptions, Copley to Lyndhurst Pipeline Proposal

Overview

Updated 04/03/21

Vegetation Description

-  Acacia victoriae tall shrubland. Medium quality.
-  Bare Ground
-  Maireana pyramidata open shrubland. Medium quality.
-  Maireana pyramidata open shrubland. Poor quality.
-  Nitraria billardierei shrubland. Medium quality.
-  Tecticornia spp. low shrubland. Medium quality.
-  Assessment Sites

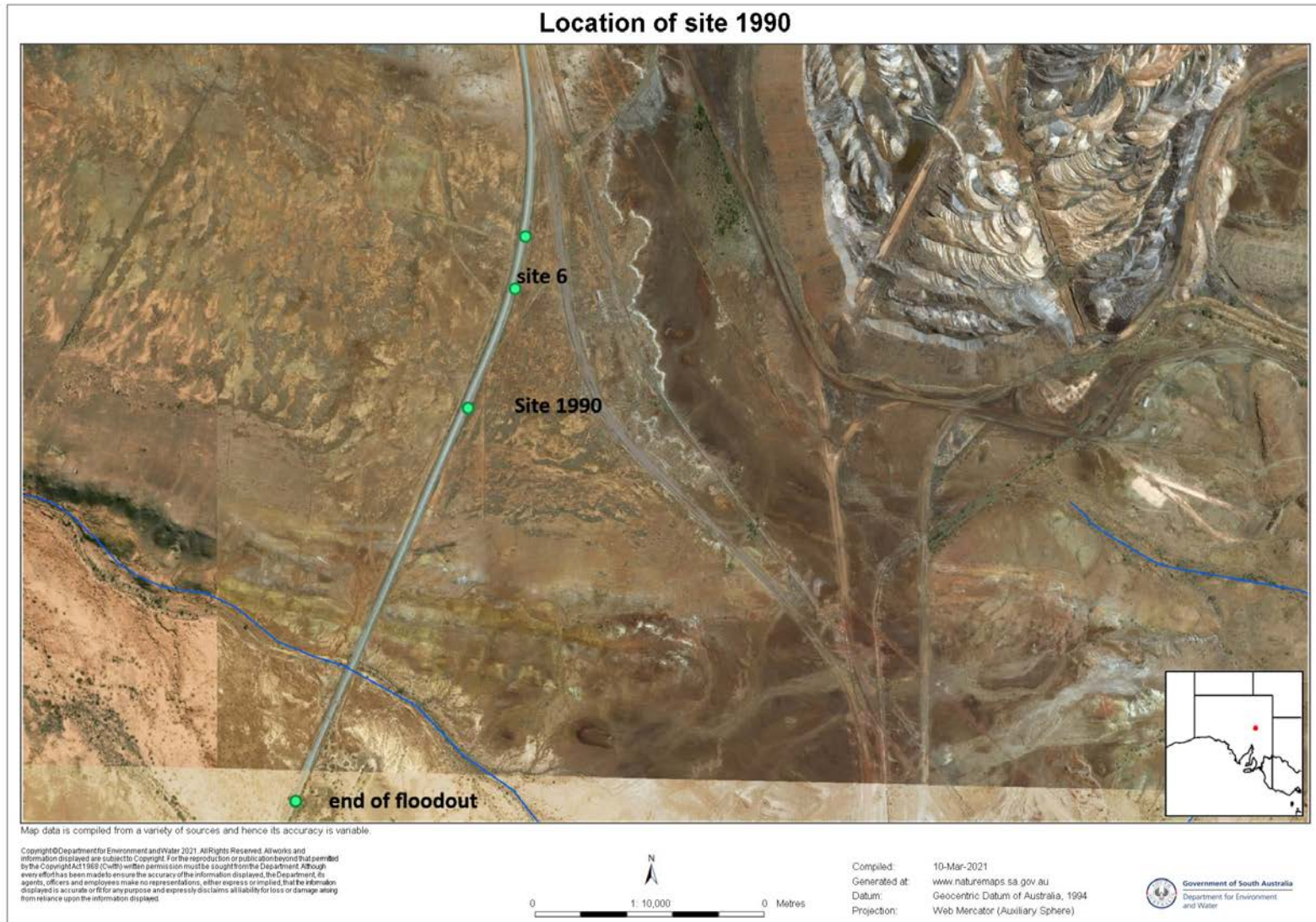
Produced by Greening Australia
October 2020

0 1.5 3 km

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Map 7 Location of Site 1990



4.2 Threatened Species assessment

Species observed on site, or recorded within 5km (50km in the arid zone) of the application area since 1995, or the vegetation is considered to provide suitable habitat

Table 1 Threatened Plant Species sited within 50kms of site.

SPECIES	COMMON NAME	NATIVE	NATIONAL RATING	STATE RATING	DATE OF LAST RECORD	Occurrence	Likelihood of impact
<i>Atriplex eichleri</i>	Eichler's Saltbush	Y		R	11-Oct-2010	Annual species seed may be present	Possible
<i>Maireana melanocarpa</i>	Black-fruit Bluebush	Y		R	16-Apr-1997	Found on sandy rises unlikely to be impacted.	Unlikely
<i>Calotis scapigera</i>	Tufted Burr-daisy	Y		R	21-Sep-1997	Annual species seed may be present	Possible
<i>Cyperus bifax</i>	Downs Flat-sedge	Y		R	20-Mar-1995	Not present in corridor	Possible
<i>Frankenia cupularis</i>		Y		R	08-Dec-1997	Not identified	Possible
<i>Frankenia subteres</i>		Y		R	09-Nov-2006	Not identified	Possible
<i>Goodenia saccata</i>	Flinders Ranges Goodenia	Y		R	30-Sep-2015	Not present in corridor	Unlikely
<i>Codonocarpus pyramidalis</i>	Slender Bell-fruit	Y	VU	E	23-Mar-2009	Not present in corridor	None
<i>Swainsona leeana</i>	Lee's Swainson-pea	Y		R	03-Sep-2010	Annual/perennial	Likely
<i>Orobanche cernua</i> var. <i>australiana</i>	Australian Broomrape	Y		R	01-Oct-2015	May be present in creek crossings	Likely
<i>Santalum spicatum</i>	Sandalwood	Y		V	25-May-2007	Not present in corridor	None

The project aims to rehabilitate the clearance site by retaining seed in the topsoil and leaving a profile to trap windborne seed. This will decrease the impact of the clearance in the long term.

Table 2 Threatened Fauna

Communications with Sharon Gilliam at the Native Vegetation Unit enabled Water Birds using the Large dams at the Coal mine to be excluded from this list.

Species	Common Name	NP& W Act	EPBC Act	Date of last record	Data Source	Species Known habitat preferences	Likelihood of use for habitat-comments
<i>Amytornis modestus</i>	Thick-billed Grass Wren		VU	27/8/2016	3	Dense Saltbush, blue-bush	Possible
<i>Aphelocephala pectoralis</i>	Chestnut-breasted Whiteface	R		21/04/2005	3	Low, very open <i>Maireana astrotricha</i> shrubland.	This habitat is present but is of poor quality. Likely
<i>Coturnix ypsilophora australis</i>	Brown Quail	V		15/11/2011	3	Dense grassland (BLA)	Not Preferred Habitat* Unlikely
<i>Falco peregrinus Macropus</i>	Peregrine Falcon	R		02/09/2016	3	Requires secure nestsites eg inland cliffs.	Not preferred habitat* Unlikely
<i>Falco subniger</i>	Black Falcon	R		20/05/2011	3	Tree lined water courses(Bird life Australia)	Habitat not present Unlikely
<i>Hamirostra melanosternon</i>	Black Brested Buzzard	R		04/09/2016	3	Tree lined creeklines and Open country in Arid regions	Habitat is present. Possible but limited nest sites
<i>Heiraaetus morhpnoides</i>	Little Eagle	V		02/09/2016	3	Open woodlands Ranges over large areas.	Likely but limited nest sites*
<i>Myiagra inquieta</i>	Restless Flycatcher	R		20/05/2011	3	Usually open woodland moving to inland scrub in winter	Likely habitat present
<i>Neophema chrysostoma</i>	Blue winged Parrot	V		20/05/2011	3	Mulga, grasslands saltbush	Likely Habit present
<i>Neophema elegans elegans</i>	Elegant Parrot	R		06/06/2018	3	Edge of range, limited nest sites	Possible
<i>Pachycephala inornate</i>	Gilbert's Whistler	R		08/07/1999	3	Mulga with dense shrubby understorey with abundant litter	Unlikely due to lack of trees or thick shrubs.
<i>Phaps histrionica</i>	Flock Bronzewing	R		30/08/2013	3	Open Grassland plains, small shrubs with open spaces	Southern edge of range so unlikely to use habitat*

<i>Petogale xanthopus xanthopus</i>	Yellow-footed Rock Wallaby		VU	09/07/2019	3	Rocky outcrops, boulder piles, cliffs, gorges in semi-arid woodlands.	Unlikely
<i>Pseudomys australis</i>	Plains Mouse		VU	24/09/2015	3	Gibber plains	Possible
<i>Morelia spilota</i>	Carpet Python	R		06/05/2019	3	Semi arboreal habitats including woodlands and grasslands	Unlikely no habitat present
<i>Vermicella annulata</i>	Common Bandy Bandy	R		01/09/2002	3	Acacia, mulga, and mallee scrubs : savannah woodland and spinifex desert sandhills.	Unlikely to be present*
<i>Falco hypoleucos</i>	Grey Falcon		VU		5	Open plains with treelined creeks for nesting.	Likely
Source: 1- BDBSA, 2 - AoLA, 3 – NatueMaps 4 – Observed/recorded in the field, 5 - Protected matters search tool, 6 – others NP&W Act; E= Endangered, V = Vulnerable, R= Rare EPBC Act; Ex = Extinct, CR = Critically endangered, EN = Endangered; VU = Vulnerable *Sharon Gilliam pers comm Habitat details from Birdlife Aust							

Criteria for the likelihood of occurrence of species within the Study area.

Likelihood	Criteria
Highly Likely/Known	Recorded in the last 10 years, the species does not have highly specific niche requirements, the habitat is present and falls within the known range of the species distribution or; The species was recorded as part of field surveys.
Likely	Recorded within the previous 20 years, the area falls within the known distribution of the species and the area provides habitat or feeding resources for the species.
Possible	Recorded within the previous 20 years, the area falls inside the known distribution of the species, but the area provide limited habitat or feeding resources for the species. Recorded within 20 -40 years, survey effort is considered adequate, habitat and feeding resources present, and species of similar habitat needs have been recorded in the area.
Unlikely	Recorded within the previous 20 years, but the area provide no habitat or feeding resources for the species, including perching, roosting or nesting opportunities, corridor for movement or shelter.

	Recorded within 20 -40 years; however, suitable habitat does not occur, and species of similar habitat requirements have not been recorded in the area. No records despite adequate survey effort.
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4.3 Cumulative impact

When exercising a power or making a decision under Division 5 of the Native Vegetation Regulations 2017, the NVC must consider the potential cumulative impact, both direct and indirect, that is reasonably likely to result from a proposed clearance activity

The initial proposal included the section of pipeline from Lyndhurst to where the line emerges from the Mine's land, but it was considered unnecessary by SAWater to replace this line at this time. The roadside along this section is heavily impacted by past construction and grazing and a corridor could be found that impacts little if any vegetation if this section is built in the future..

The designers and engineers collaborated with the Vegetation Consultant to design all laydowns, access points and pipeline corridor to reduce vegetation disturbance to a minimum on the section to be built. The disturbed area will have the topsoil returned and disturbed to ensure seed capture enabling successful rehabilitation of the site.

4.4 Address the Mitigation Hierarchy

When exercising a power or making a decision under Division 5 of the Native Vegetation Regulations 2017, the NVC must have regard to the mitigation hierarchy. The NVC will also consider, with the aim to minimize, impacts on biological diversity, soil, water and other natural resources, threatened species or ecological communities under the EPBC Act or listed species under the NP&W Act.

a) Avoidance – outline measures taken to avoid clearance of native vegetation

The design avoids vegetation clearance wherever possible. Placement of the pipeline corridor to avoid the vegetation along the road edge minimizes the impact of the development.

b) Minimization – if clearance cannot be avoided, outline measures taken to minimize the extent, duration and intensity of impacts of the clearance on biodiversity to the fullest possible extent (whether the impact is direct, indirect or cumulative).

SAWater's contracting engineers collaborated on site with the vegetation consultant to reduce the impact of the pipeline corridor. All efforts were made to site access points, laydowns and creek crossings in areas that had minimal vegetation cover.

- c) **Rehabilitation or restoration – outline measures taken to rehabilitate ecosystems that have been degraded, and to restore ecosystems that have been degraded, or destroyed by the impact of clearance that cannot be avoided or further minimized, such as allowing for the re-establishment of the vegetation.**

During construction, the topsoil will be removed and retained to return to the site following the placement of the pipeline. The surface will be rehabilitated to ensure no major erosion occurs and the surface will trap windborne seed. This will ensure the site revegetates as quickly as climatic conditions allow.

- d) **Offset – any adverse impact on native vegetation that cannot be avoided or further minimized should be offset by the achievement of a significant environmental benefit that outweighs that impact.**

SAWater requests that they pay the SEB requirement into the NVC fund to offset the clearance of the vegetation that is unavoidable while providing a reliable water supply to Lyndhurst.

4.5 Principles of Clearance (Schedule 1, Native Vegetation Act 1991)

The Native Vegetation Council will consider Principles 1(b), 1(c) and 1(d) when assigning a level of Risk under Regulation 16 of the Native Vegetation Regulations. The Native Vegetation Council will consider all the Principles of clearance of the Act as relevant, when considering an application referred under the *Planning, Development and Infrastructure Act 2016*.

Principle of clearance	Relevant information	Assessment against the principles	Moderating factors that may be considered by the NVC
Principle 1b - significance as a habitat for wildlife	17 species of fauna were recorded to occur in the 50km zone around the clearance. It is unlikely that 7 of these species will occur in the area, 3 may possibly occur and 7 are likely to occur. Table 2. Patches; Threatened Fauna Score 0.1 Unit biodiversity Score	<u>Seriously at Variance</u> Maireana pyramidata open Shrubland Poor condition Sites 6 UBS 52.97 10 UBS 45.8 Medium Condition 1990 62.1 Tecticornia spp low shrubland 5 UBS 46.98 Acacia victoriae tall shrubland - creek lines. 9 UBS 68.77	The placement of the clearance corridor to reduce disturbance of existing vegetation, the linear nature of the clearance, the method proposed for construction and the rehabilitation of the site are aimed at minimizing the long term impact of the clearance on all threatened species known to occur in the area.

		Nitraria billardiarei shrubland 7 UBS 75.15 <u>At Variance</u> – No sites	
<i>Principle 1c - plants of a rare, vulnerable or endangered species</i>	No threatened plant species were found during all site visits along the linear clearance zone. Threatened Flora Score 0	<u>Seriously at Variance</u> - nil <u>At Variance</u> – nil	
<i>Principle 1d - the vegetation comprises the whole or part of a plant community that is Rare, Vulnerable or endangered:</i>	Nil Threatened Community	Score 1	

4.6 Risk Assessment

Determine the level of risk associated with the application

Total clearance	No. of trees	0
	Area (ha)	26.79
	Total biodiversity Score	1408.9087
Seriously at variance with principle 1(b), 1(c) or 1 (d)	1(b)	
Risk assessment outcome	Level 3 (TBS <2500) Elevated to Level 4 Due to variance	

5. Clearance summary

Clearance Area(s) Summary table

Insert table from the Summary Clearance Table for *patches* of vegetation assessed using the Bushland or Rangeland Assessment Method.

Block	Site	Species diversity score	Threatened Ecological community 1Score	Threatened plant score	Threatened fauna score	UBS	Area (ha)	Total Biodiversity score	Loss factor	Loadings	Reductions	SEB Points required	SEB payment	Admin Fee
Mur npe	5		1	0	0.1	46.98	0.92	43.22	1		0.5	13.61	\$1200.89	\$66.05
M	6		1	0	0.1	52.97	7.83	414.77	1		0.5	217.75	\$11523.73	\$633.81
M	7		1	0	0.1	75.11	1.14	85.62	1		0.5	44.98	\$2380.32	\$130.92
M	9		1	0	0.1	68.77	3.0	206.32	1		0.5	108.31	\$5732.21	\$315.27
NF	10		1	0	0.1	45.8	12.53	573.92	1		0.5	301.28	\$15,944.76	\$876.96
M	1990		1	0	0.1	62.1	1.37	85.08	1		0.5	44.67	\$2363.82	\$130.01
						Total		1408.93				739.68	\$39145.72	\$2135.01

Note -rounding differences in clearance table.

Totals summary table

	Total Biodiversity score	Total SEB points required	SEB Payment	Admin Fee	Total Payment
Application	1408.9087	739.68	\$39,145.72	\$2135.01	\$41,280.73

Economies of Scale Factor	0.11
Rainfall (mm)	185

6. Significant Environmental Benefit

A Significant Environmental Benefit (SEB) is required for approval to clear under Division 5 of the *Native Vegetation Regulations 2017*. The NVC must be satisfied that as a result of the loss of vegetation from the clearance that an SEB will result in a positive impact on the environment that is over and above the negative impact of the clearance.

ACHIEVING AN SEB

Indicate how the SEB will be achieved by ticking the appropriate box and providing the associated information:

☐ Pay into the Native Vegetation Fund.

PAYMENT SEB

If a proponent proposes to achieve the SEB by paying into the Native Vegetation Fund, summary information must be provided on the amount required to be paid and the manner of payment:

- **Payment amount \$41,280.73**

7. Appendices

Appendix 1. Fauna Species List

SPECIES	COMMON NAME	NATIVE	NATIONAL RATING	STATE RATING	DATE OF LAST RECORD
<i>Amytornis modestus</i>	Thick-billed Grasswren	Y	VU		27-Aug-2016
<i>Aphelocephala pectoralis</i>	Chestnut-breasted Whiteface	Y		R	21-Apr-2005
<i>Coturnix ypsilophora australis</i>	Brown Quail	Y		V	15-Nov-2011
<i>Falco peregrinus macropus</i>	Peregrine Falcon	Y		R	02-Sep-2016
<i>Falco subniger</i>	Black Falcon	Y		R	20-May-2011
<i>Hamirostra melanosternon</i>	Black-breasted Buzzard	Y		R	04-Sep-2016
<i>Hieraaetus morphnoides</i>	Little Eagle	Y		V	02-Sep-2016
<i>Myiagra inquieta</i>	Restless Flycatcher	Y		R	20-May-2011
<i>Neophema chrysostoma</i>	Blue-winged Parrot	Y		V	20-May-2011
<i>Neophema elegans elegans</i>	Elegant Parrot	Y		R	05-Sep-2019
<i>Pachycephala inornata</i>	Gilbert's Whistler	Y		R	10-Jul-1999
<i>Phaps histrionica</i>	Flock Bronzewing	Y		R	30-Aug-2013
<i>Petrogale xanthopus xanthopus</i>	Yellow-footed Rock-wallaby	Y	VU	SP	09-Jul-2019
<i>Pseudomys australis</i>	Plains Mouse	Y	VU	V	24-Sep-2015
<i>Morelia spilota</i>	Carpet Python	Y		R	06-May-2019
<i>Vermicella annulata</i>	Common Bandy Bandy	Y		R	01-Sep-2002
<i>Falco hypoleucos</i>	Grey Falcon	Y	VU		

**Water birds -excluded on Advice Sharon
Gillam**

Anhinga novaehollandiae novaehollandiae	Australasian Darter	Y	R	21-Nov-2012
Biziura lobata menziesi	Musk Duck	Y	R	15-Nov-2011
Cladorhynchus leucocephalus	Banded Stilt	Y	V	23-Nov-2012
Oxyura australis	Blue-billed Duck	Y	R	16-Nov-2011
Plegadis falcinellus	Glossy Ibis	Y	R	21-Nov-2012
Podiceps cristatus australis	Great Crested Grebe	Y	R	03-Sep-2019
Spatula rhynchotis	Australasian Shoveler	Y	R	21-Nov-2012
Stictonetta naevosa	Freckled Duck	Y	V	21-Nov-2012

Appendix 2. Bushland, Rangeland or Scattered Tree Vegetation Assessment Scoresheets associated with the proposed clearance and SEB Area (to be submitted in Excel format)

Appendix 3. Flora Species List

SPECIES	COMMON NAME	NATIVE	NATIONAL RATING	STATE RATING	NUMBER OF RECORDS	DATE OF LAST RECORD
Atriplex eichleri	Eichler's Saltbush	Y		R	5	11-Oct-2010
Maireana melanocarpa	Black-fruit Bluebush	Y		R	9	16-Apr-1997
Frankenia cupularis		Y		R	4	08-Dec-1997
Frankenia subteres		Y		R	20	09-Nov-2006
Goodenia saccata	Flinders Ranges Goodenia	Y		R	5	30-Sep-2015
Codonocarpus pyramidalis	Slender Bell-fruit	Y	VU	E	36	23-Mar-2009
Swainsona leeana	Lee's Swainson-pea	Y		R	2	03-Sep-2010
Orobanche cernua var. australiana	Australian Broomrape	Y		R	12	01-Oct-2015
Santalum spicatum	Sandalwood	Y		V	20	25-May-2007

Files attached

Rangeland Assessment Scoresheets

Clearance Summary Tables

Design Shape Files



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

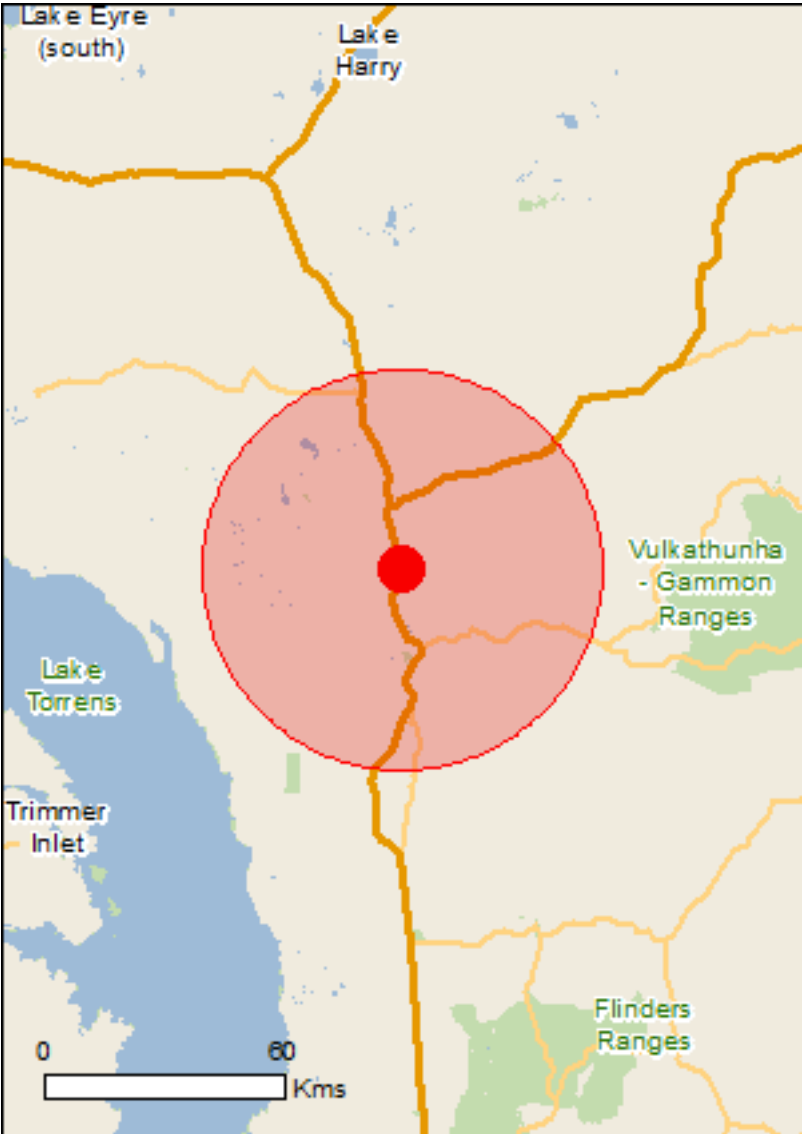
Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 12/03/21 11:01:33

- [Summary](#)
- [Details](#)

[Matters of NES](#)[Other Matters Protected by the EPBC Act](#)[Extra Information](#)
- [Caveat](#)
- [Acknowledgements](#)



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2015

[Coordinates](#)

Buffer: 50.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	15
Listed Migratory Species:	10

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	16
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	2
Regional Forest Agreements:	None
Invasive Species:	14
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

National Heritage Properties		[Resource Information]
Name	State	Status
Natural		
Ediacara Fossil Site - Nilpena	SA	Listed place

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Amytornis merrotsyi merrotsyi Short-tailed Grasswren (Flinders Ranges) [86269]	Vulnerable	Species or species habitat likely to occur within area
Amytornis modestus Thick-billed Grasswren [84121]	Vulnerable	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat known to occur within area
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat likely to occur within area
Pezoporus occidentalis Night Parrot [59350]	Endangered	Extinct within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Mammals		
Notomys fuscus Dusky Hopping-mouse, Wilkiniti [125]	Vulnerable	Species or species habitat likely to occur within area
Petrogale xanthopus xanthopus Yellow-footed Rock-wallaby (SA and NSW) [66646]	Vulnerable	Species or species habitat known to occur within area
Pseudomys australis Plains Rat, Palyoora, Plains Mouse [108]	Vulnerable	Species or species habitat may occur within area
Plants		
Acacia carneorum Needle Wattle, Dead Finish, Purple-wood Wattle [66685]	Vulnerable	Species or species habitat may occur within area
Acacia menzelii Menzel's Wattle [9218]	Vulnerable	Species or species

Name	Status	Type of Presence
		habitat may occur within area
Codonocarpus pyramidalis Slender Bell-fruit, Camel Poison [19507]	Vulnerable	Species or species habitat known to occur within area
Frankenia plicata [4225]	Endangered	Species or species habitat known to occur within area
Swainsona murrayana Slender Darling-pea, Slender Swainson, Murray Swainson-pea [6765]	Vulnerable	Species or species habitat likely to occur within area

Listed Migratory Species

[[Resource Information](#)]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area

Migratory Terrestrial Species		
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area

Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within

Name	Status	Type of Presence
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Carrichtera annua Ward's Weed [9511]		Species or species habitat likely to occur within area
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area
Tamarix aphylla Athel Pine, Athel Tree, Tamarisk, Athel Tamarisk, Athel Tamarix, Desert Tamarisk, Flowering Cypress, Salt Cedar [16018]		Species or species habitat likely to occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-30.41072 138.38033

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [Office of Environment and Heritage, New South Wales](#)
- [Department of Environment and Primary Industries, Victoria](#)
- [Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [Department of Environment, Water and Natural Resources, South Australia](#)
- [Department of Land and Resource Management, Northern Territory](#)
- [Department of Environmental and Heritage Protection, Queensland](#)
- [Department of Parks and Wildlife, Western Australia](#)
- [Environment and Planning Directorate, ACT](#)
- [Birdlife Australia](#)
- [Australian Bird and Bat Banding Scheme](#)
- [Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [Museum Victoria](#)
- [Australian Museum](#)
- [South Australian Museum](#)
- [Queensland Museum](#)
- [Online Zoological Collections of Australian Museums](#)
- [Queensland Herbarium](#)
- [National Herbarium of NSW](#)
- [Royal Botanic Gardens and National Herbarium of Victoria](#)
- [Tasmanian Herbarium](#)
- [State Herbarium of South Australia](#)
- [Northern Territory Herbarium](#)
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- [CSIRO](#)
- [Australian Tropical Herbarium, Cairns](#)
- [eBird Australia](#)
- [Australian Government – Australian Antarctic Data Centre](#)
- [Museum and Art Gallery of the Northern Territory](#)
- [Australian Government National Environmental Science Program](#)
- [Australian Institute of Marine Science](#)
- [Reef Life Survey Australia](#)
- [American Museum of Natural History](#)
- [Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

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