

Name	Threatened	Type of Presence
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered*	Species or species habitat may occur within area
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Macronectes giganteus Southern Giant-Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant-Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Foraging, feeding or related behaviour likely to occur within area
Thalassarche bulleri Buller's Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta (sensu stricto) Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable*	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross [64459]	Vulnerable*	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area
Carcharodon carcharias Great White Shark [64470]	Vulnerable	Species or species habitat likely to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area

Name	Threatened	Type of Presence
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Migratory Terrestrial Species		
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Migratory Wetlands Species		
Ardea alba Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat likely to 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
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [\[Resource Information \]](#)

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Commonwealth Land -
Commonwealth Land - Minister of Transport
Commonwealth Land - Telstra Corporation Limited

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		
Apus pacificus Fork-tailed Swift [678]		Species or species

Name	Threatened	Type of Presence
Ardea alba Great Egret, White Egret [59541]		habitat likely to occur within area Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat likely to occur within area
Catharacta skua Great Skua [59472]		Species or species habitat may occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered*	Species or species habitat may occur within area
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	Foraging, feeding or related behaviour likely 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 known to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant-Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Phalacrocorax fuscescens Black-faced Cormorant [59660]		Foraging, feeding or related behaviour likely to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Foraging, feeding or related behaviour likely to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur

Name	Threatened	Type of Presence within area
Thalassarche bulleri Buller's Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta (sensu stricto) Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable*	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross [64459]	Vulnerable*	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thinornis rubricollis rubricollis Hooded Plover (eastern) [66726]		Species or species habitat known to occur within area
Fish		
Acentronura australe Southern Pygmy Pipehorse [66185]		Species or species habitat may occur within area
Campichthys galei Gale's Pipefish [66191]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippocampus abdominalis Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring- back Pipefish [66243]		Species or species habitat may occur within area
Hypselognathus horridus Shaggy Pipefish, Prickly Pipefish [66244]		Species or species habitat may occur within area
Hypselognathus rostratus Knifesnout Pipefish, Knife-snouted Pipefish [66245]		Species or species habitat may occur within area
Kaupus costatus Deepbody Pipefish, Deep-bodied Pipefish [66246]		Species or species habitat may occur within area
Leptoichthys fistularius Brushtail Pipefish [66248]		Species or species habitat may occur within area
Lissocampus caudalis Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within

Name	Threatened	Type of Presence area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
Solegnathus robustus Robust Pipehorse, Robust Spiny Pipehorse [66274]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish [66276]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Stipecampus cristatus Ringback Pipefish, Ring-backed Pipefish [66278]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area
Vanacampus poecilolaemus Longsnout Pipefish, Australian Long-snout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area
Vanacampus vercoi Verco's Pipefish [66286]		Species or species habitat may occur within area
Mammals		
Arctocephalus forsteri New Zealand Fur-seal [20]		Species or species habitat may occur within area
Neophoca cinerea Australian Sea-lion [22]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or

Name	Threatened	Type of Presence related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Whales and other Cetaceans		[Resource Information]
Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

Places on the RNE [\[Resource Information \]](#)

Note that not all Indigenous sites may be listed.

Name	State	Status
Natural		
Ptilotus beckerianus Site	SA	Registered
Pultenaea Trichophylla site	SA	Registered
Vanilla Conservation Park	SA	Registered
Indigenous		
Poonindie Mission	SA	Registered
Historic		
Schuermann Mission Site	SA	Indicative Place
Tod River Road Bridge (disused)	SA	Indicative Place
St Matthews Anglican Mission Church	SA	Registered

State and Territory Reserves [\[Resource Information \]](#)

Name	State
Port Lincoln	SA
Tucknott Scrub	SA
Unnamed (No.HA1117)	SA
Unnamed (No.HA1161)	SA
Unnamed (No.HA1206)	SA
Unnamed (No.HA1263)	SA
Unnamed (No.HA1388)	SA
Unnamed (No.HA1409)	SA
Unnamed (No.HA224)	SA
Unnamed (No.HA318)	SA
Unnamed (No.HA456)	SA
Unnamed (No.HA478)	SA
Unnamed (No.HA516)	SA
Unnamed (No.HA528)	SA
Unnamed (No.HA598)	SA
Unnamed (No.HA726)	SA
Unnamed (No.HA729)	SA
Unnamed (No.HA739)	SA
Unnamed (No.HA776)	SA
Unnamed (No.HA787)	SA
Vanilla	SA
Vanilla Land Settlement	SA

Invasive Species [\[Resource Information \]](#)

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
Birds		
Alauda arvensis		
Skyline [656]		Species or species habitat likely to occur within area
Carduelis carduelis		
European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia		
Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus		
House Sparrow [405]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Mammals		
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Asparagus declinatus Bridal Veil, Bridal Veil Creeper, Pale Berry Asparagus Fern, Asparagus Fern, South African Creeper [66908]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area
Genista linifolia Flax-leaved Broom, Mediterranean Broom, Flax Broom [2800]		Species or species habitat likely to occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Olea europaea Olive, Common Olive [9160]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Solanum elaeagnifolium Silver Nightshade, Silver-leaved Nightshade, White Horse Nettle, Silver-leaf Nightshade, Tomato Weed, White Nightshade, Bull-nettle, Prairie-berry, Satansbos, Silver-leaf Bitter-apple, Silverleaf-nettle, Trompillo [12323]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Ulex europaeus		
Gorse, Furze [7693]		Species or species habitat likely to occur within area
Nationally Important Wetlands		[Resource Information]
Name		State
Tod River Wetland System		SA

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

- 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.

Acknowledgements

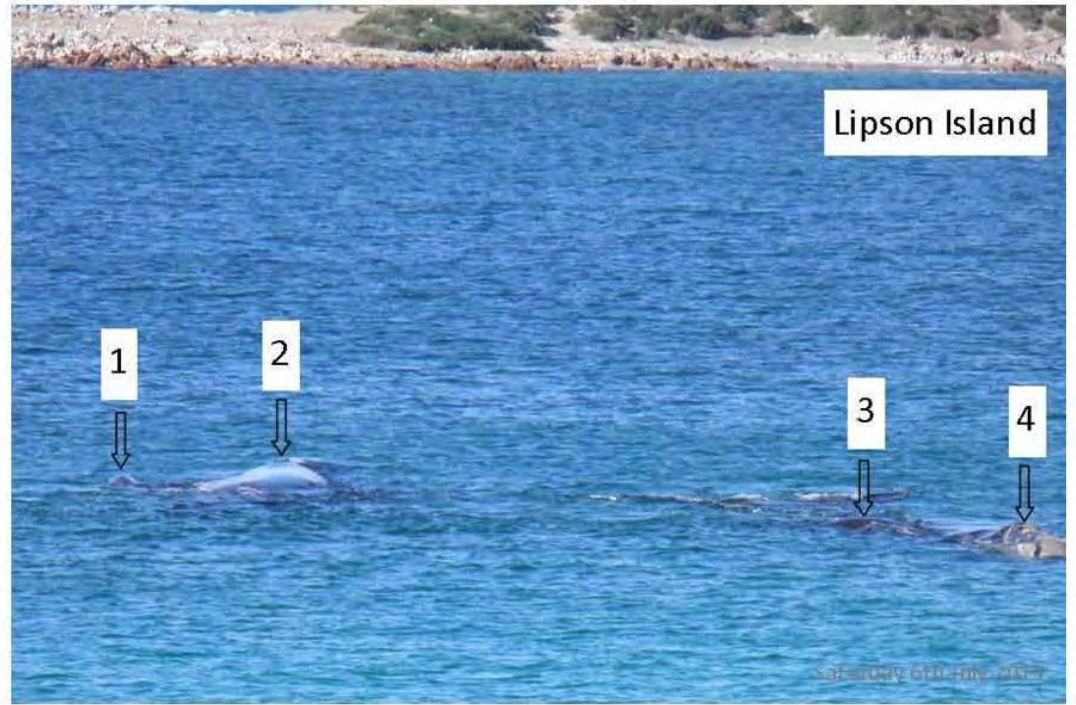
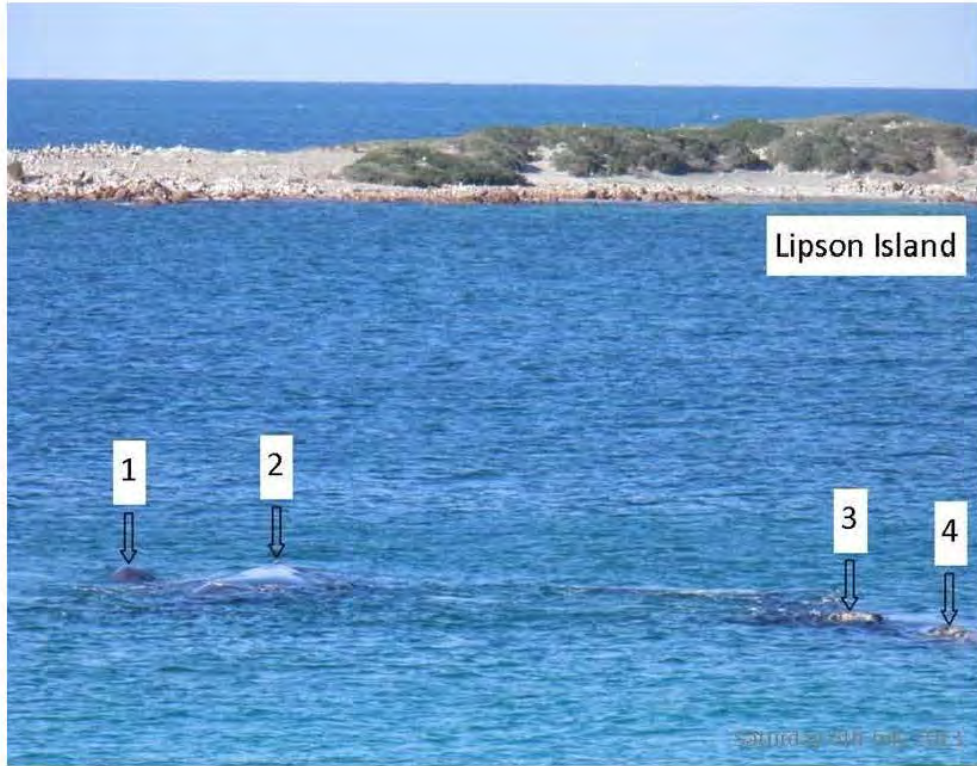
This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

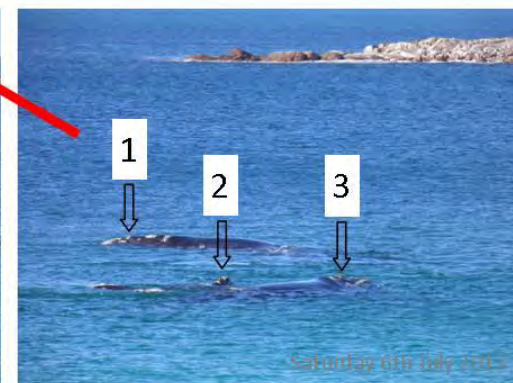
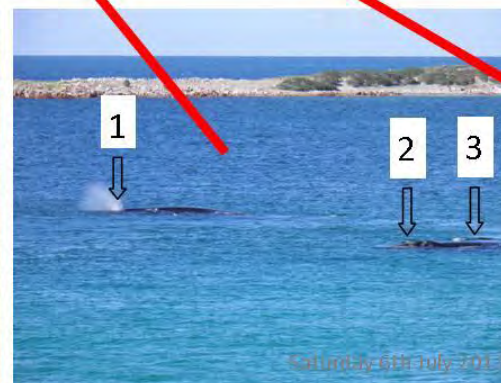
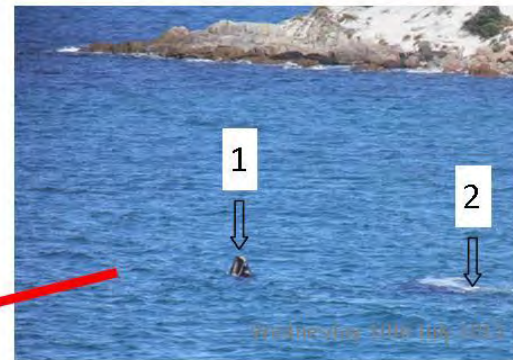
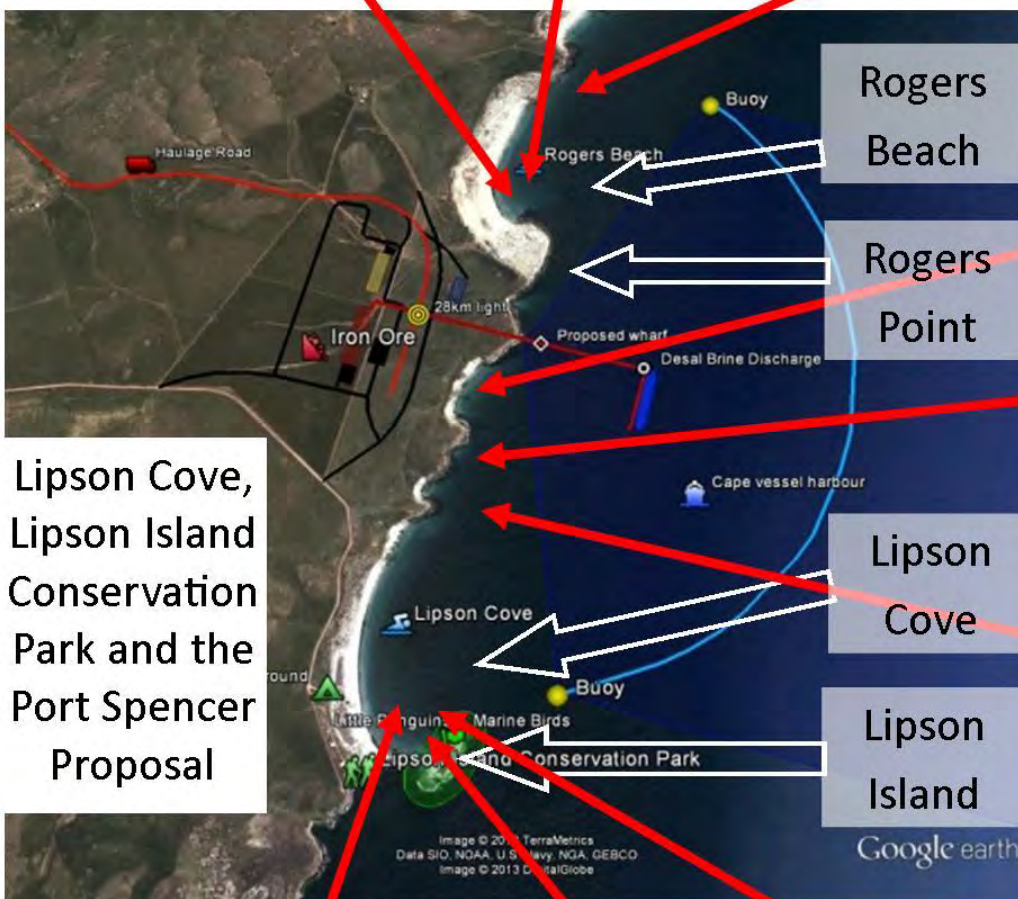
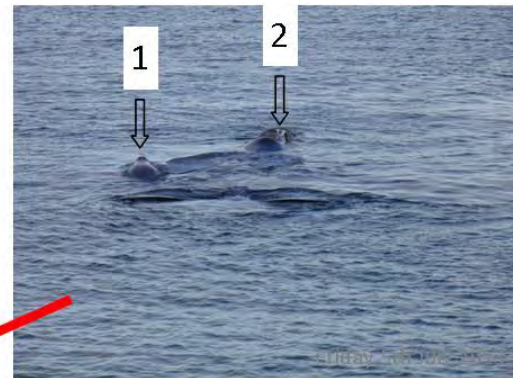
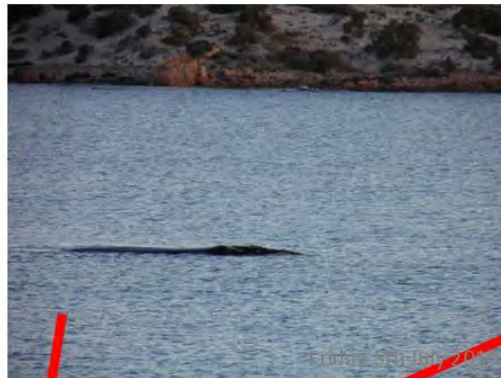
- [Department of Environment, Climate Change and Water, New South Wales](#)
- [Department of Sustainability and Environment, Victoria](#)
- [Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [Department of Environment and Natural Resources, South Australia](#)
- [Parks and Wildlife Service NT, NT Dept of Natural Resources, Environment and the Arts](#)
- [Environmental and Resource Management, Queensland](#)
- [Department of Environment and Conservation, Western Australia](#)
- [Department of the Environment, Climate Change, Energy and Water](#)
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- [National Herbarium of NSW](#)
- [Royal Botanic Gardens and National Herbarium of Victoria](#)
- [Tasmanian Herbarium](#)
- [State Herbarium of South Australia](#)
- [Northern Territory Herbarium](#)
- [Western Australian Herbarium](#)
- [Australian National Herbarium, Atherton and Canberra](#)
- [University of New England](#)
- [Ocean Biogeographic Information System](#)
- [Australian Government, Department of Defence](#)
- [State Forests of NSW](#)
- [Geoscience Australia](#)
- [CSIRO](#)
- 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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DEWNR File No. 33/6259
DEWNR Doc No. 33/13/0019

|| July 2013

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s22

South West Section
North West and Offshore Assessment Branch
Department of Sustainability, Environment, Water, Population and Communities
GPO Box 787
CANBERRA ACT 2601

Dear **s22**

Re: EPBC Referral 2013/6919: Project Fusion, Eyre Peninsula, South Australia.

I write on behalf of the South Australian Government regarding your invitation to comment on the above referral received by the Australian Government Department of Sustainability, Environment, Water, Population and Communities under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The South Australian Government advises the following in the relation to Project Fusion, Eyre Peninsula, South Australia.

State Assessments

Project Fusion will be assessed under the *Mining Act, 1971*, the *Development Act, 1993* and the *Native Vegetation Act 1991* and as such will not fully qualify for accreditation under the State – Commonwealth Bilateral Agreement¹. There will, however, be opportunity to share information arising from the environmental assessments under our respective Acts and to include EPBC environmental offset requirements in the South Australian system. Further details regarding state assessments can be found in Attachment 1.

Matters of National Environmental Significance (NES)

The Referral identifies Koppio Hills, as part of the Tod River Wetland system, as an 'area of conservation significance', due to its biodiversity and significant remnant vegetation. The project area supports a significant number of state and EPBC listed species and ecological communities.

In relation to matters of NES, the South Australian Government considers that:

- a) the Tufted Bush-pea would be significantly impacted by the proposal;

¹ 2008 Commonwealth-State Bilateral Agreement pertaining to Division 2 of Part 4 of the *Development Act*

- b) other species and ecological communities such as the Peppermint Box Grassy Woodland of South Australia have the potential to be significantly impacted; and
- c) further investigations may be required to ascertain the potential impacts on:
 - the Tod River Wetland System, surface water and ground water as well as the Tod River and water-dependant flora and fauna downstream which may support EPBC listed matters
 - EPBC listed matters from final footprint locations and infrastructure design
 - other EPBC listed matters which may not have been considered due to survey times, assumptions or methodologies.

Further details are provided in Attachment 1.

Environmental Assessment

As per the criteria listed in the Commonwealth's Environment Assessment Manual (May 2012), the proposal potentially impacts several Matters of National Environmental Significance, has complexity, requires further information and may attract a degree of public concern. Hence, should the Australian Government consider the proposal 'a controlled action', assessment by Public Environment Report (PER) would be appropriate using state assessment information where available.

For further information please contact the SA EPBC Act Referral Team, in particular s22

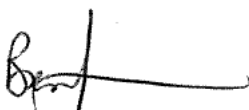
s22

or s22

or e-mail:

DLDEWNREPBCReferrals@sa.gov.au.

Yours sincerely,



Brenton Grear
EXECUTIVE DIRECTOR
CONSERVATION AND LAND MANAGEMENT

Detailed South Australian Comments

Assessments relating to Project Fusion, Eyre Peninsula, South Australia

Action	EPBC Act	Mining Act	Development Act	Native Vegetation Act
Exploration drilling	Deemed not a 'controlled action' (2012)			Exempt with requirement to demonstrate clearance has been minimised and rehabilitated. No SEB
Port Spencer – deep water port facility & associated infrastructure	(Stages 1 & 2) Approved (2013)		Provisional development authorisation subj to further assessment & conditions	SEB required
Mining operations	Current referral	Mining Lease Proposal (MLP) & Program for Environment Protection & Rehabilitation (PEPR) - assessment not yet underway		Will be administered by DMITRE under NV Act (with Delegation from NVC to DMITRE) - SEB required
Fusion processing plant	Current referral		S46 Stage 2 – underway - declared 23/05/2013	SEB required
slurry pipelines	Current referral		S46 Stage 2 underway - declared 23/05/2013	SEB required
other components, eg roads, storage facilities etc	Current referral		S46 Stage 2 – underway - declared 23/05/2013	SEB required

State Assessments

Development Act, 1993

Port Spencer Stage 2 was declared a Major Development (a project of State significance in South Australia) on 23 May 2013, which covers the Project Fusion processing plant and slurry pipelines (as well as other components). Port Spencer Stage 1 was subject to environmental assessments under a Public Environmental Report (PER) and to be consistent, it is expected that a PER would also be required for Stage 2. Lodgement of a development application to trigger this Development Assessment is yet to occur.

Mining Act, 1971

Assessment processes under the Mining Act will require Eyre Iron to provide evidence of a comprehensive program to avoid risk to threatened and vulnerable species and to mitigate residual risk. A Mining Lease Proposal (MLP) and an approved Program for Environment Protection and Rehabilitation (PEPR) form part of this assessment.

Native Vegetation Act, 1991

Where native vegetation is to be cleared, the SA Native Vegetation Act requires 'environmental offsets' to counterbalance the loss of that vegetation to achieve a Significant Environmental Benefit (SEB) either on the site or within the same region. The intent is to replace the immediate

environmental values lost through clearing, as well as to achieve a net gain to improve the condition of the environment and biodiversity of the region.

The Department of Manufacturing, Innovation, Trade, Resources and Energy (DMITRE) has been delegated to work with proponents to develop SEB projects. These have the potential to fulfil both the South Australian and the Commonwealth environmental offset requirements.

Areas of Conservation Significance

a) Koppio Hills

The referral identifies the Koppio Hills as an area of 'conservation significance on the lower half of the Eyre Peninsula, due to a combination of diverse soil types, vegetation types and land forms occurring in close proximity. This, together with relatively high rainfall, has given rise to diverse and varied landscape systems with small segments of remnant habitat containing threatened flora and fauna species.' The referral recognises that the mine study area 'maintains a diversity of flora and fauna due to the presence of a network of remnant vegetation blocks either linked by corridors or in close proximity to each other. The majority of these blocks have never been cleared and the original topographical features remain largely unchanged. Consequently, the Koppio Hills, in contrast to the coastal plain, still contain significant biodiversity, including remnants of some highly significant vegetation communities. A range of threatened species that were once more widespread across the lower Eyre Peninsula are also present within the Koppio Hills' (page 68, section 3.3).

The South Australian Government confirms the accuracy of these statements and also advises that the area is significant in both its total area and its diversity, both within the mine site and within the Eyre Hills region. The subregion contains the highest threatened species richness for both flora and fauna for all the Interim Bio-geographic Regionalisation for Australia (IBRA) subregions on the Eyre Peninsula and includes several Heritage Agreement areas.

The area also falls within the boundaries of the Eyre Peninsula Biodiversity Plan (Department of Environment and Natural Resources, 2001) which identifies the Koppio Hills as a threatened habitat area. A Priority Action of the Plan to manage threatened habitat areas is to retain all existing remnant vegetation. The EPBC listed species known or likely to be present within the application area generally have the highest priority ranking for immediate attention and priority funding within this Plan. The area also supports a number of State listed threatened flora and fauna and associated habitats.

b) Tod River Wetland System

The proposed site is within the Tod Catchment Water Protection Zone, which is a priority catchment within the Eyre Peninsula Natural Resources Management region and is largely encompassed by the Tod River Wetland System, which is listed on the Australian Directory of Important Wetlands.

c) Matters of National Environmental Significance

Pultenaea trichophylla (Tufted Bush-pea) – The Tufted Bush-pea has a very limited distribution (approximately 184 sq. km) being endemic to the eastern side of the Lower Eyre Peninsula. The soil requirements for the species are quite specific, i.e. acidic loams over ironstone or acidic lateritic soils. All known habitats of this species are considered critical to

its survival and past declines in Tufted Bush-pea numbers have been described as largely being a result of the clearance of its habitat.

A significant sub-population of the Tufted Bush-pea occurs within the project area. The survey conducted by Donato Consultants has indicated a considerable increase, possibly attributed to regeneration from the 2005 bushfires, particularly within the South Australian Heritage Agreement area 310 where the Brennand Pit area is proposed.

The clearing of the population within the mine site study area (around 10,000 individuals) presents a significant impact on the total population of the species as well potentially fragmenting the population into two groups. While there may be opportunities for the revegetation of the species as part of SEB offsets, the creation of artificial habitats (if successful) cannot fully replace the biodiversity and the ecosystem services of the existing naturally occurring habitats nor negate the potential impact on the species overall.

Peppermint Box (*Eucalyptus odorata*) Grassy Woodland of South Australia – This nationally threatened ecological community is endemic to South Australia, with a distribution predominantly restricted to the eastern side of Spencer and St Vincent's Gulfs. The Eyre Peninsula distribution is relatively small in area and is significantly disjunct from the eastern communities. For this reason it would be considered that any degradation or clearance of Peppermint Box Grassy Woodland on southern Eyre Peninsula is likely to have a significant impact on the westernmost portion of the ecological community.

Eyre Peninsula Blue Gum (*Eucalyptus petiolaris*) Grassy Woodland – The nomination for the EPBC listing of this ecological community was placed on the 2011 Finalised Priority Assessment List (FPAL) by the Commonwealth Environment Minister. An assessment for eligibility for listing has progressed in the form of a draft Description of the Ecological Community and is due for completion by 30 June 2013 (DSEWPac 2013). This ecological community is a significant component of the project area, and the population present within the project area is a significant component of the remaining community.

Assessment constraints on MNES

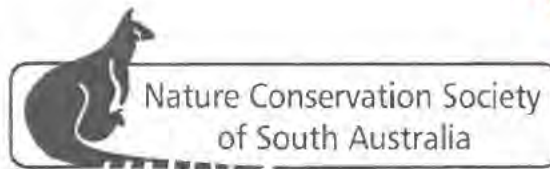
Based on information provided in the referral for Project Fusion, a number of issues have been identified as impeding the ability to accurately assess potential impacts on Matters of National Environmental Significance. They are outlined as follows:

- a) There is still more to be understood in relation to potential groundwater resources within the identified area including the inter-relationships with ground water dependant ecosystems and surface water systems. Potential impacts the project will have on the Tod River Wetland System, surface water, the Tod River downstream (including EPBC listed species) and the water-dependent flora and fauna downstream need to be considered.
- b) The depth of the three mine pits indicates a probable significant interaction with groundwater and warrants further investigation. Ecological consequences of existing interactions with ground water, ground water disposal (should removal from the pits by pumping be required) and groundwater drawdown should be modelled in order to effectively assess potential impacts on the local ecological communities. Salinity levels and the presence of acid sulphate soils within the catchment area would also need to be addressed.
- c) Detailed information regarding the Rock Storage Facility (RSF) is required to adequately assess potential impacts from the location, size and design. For effective assessment, its

construction from potential acid forming materials warrants a fundamental understanding of the project's footprint, the nature and extent of the acidification threat, and the means by which it will be addressed.

- d) Detailed information regarding the Tailings Storage Facility (TSF) is also required. Probable location and footprint, the nature and extent of the pondage, the area of exposed water, its toxicity, content and pH, and the means by which threats will be addressed (attraction of birds and other fauna) may inform further assessments on other matters such as EPBC significant migratory waterbirds not normally attracted to the area and presently excluded because of a lack of habitat in the project area.
- e) Both the South Australian Biological Survey Standard Sampling and the Bush Condition Monitoring methodologies use 30 m x 30 m quadrats (not 10m x 10 m). Extensive and detailed searches of larger quadrats across a time scale that includes flowering is required to detect small, cryptic, rare and threatened flora species in dense and diverse habitat. The absence of certain species from surveys conducted using the methodology outlined in the referral such as the EPBC listed *Ptilotus beckerianus* (Ironstone Mulla Mulla) and *Thelymitra epipactoides* (Metallic Sun-orchid) does not necessarily mean they are not in the project area. Conversely, where a threatened plant is detected, its detection and presence is highly significant. The use of a Total Search Area (TAS) method is a valid methodology but it is unclear as to how the additional field surveys were conducted.
- f) Survey times would have been unable to record sightings of the EPBC-Listed *Caladenia brumalis* (Winter Spider-orchid), which usually finishes flowering before September and of the *Prasophyllum goldsackii* (Goldsack's Leek-orchid), which does not flower until late September. Additionally, *Prasophyllum laxum* (R.J.Bates), which the Threatened Species Scientific Committee is currently considering nominating as Critically Endangered under the EPBC Act, would not have been detected as it flowers from late September to mid-October. This recently described perennial terrestrial orchid is endemic to the eastern lower Eyre Peninsula and has been recorded within the mine site boundary and proposed pipeline corridor near Koppio. It is only known from less than five records and any degradation or clearance of this species would have a significant impact on its long-term survival.
- g) The referral indicates that the *Stipiturus malachurus parimeda* (Southern Emu-wren – Eyre Peninsula) is unlikely to occur in the project area. The Southern Emu-wren has been recorded within 10 km of the site on the lower Tod River in 2004 and there are habitat remnants across the mine site. The species has undergone significant range contraction in the last ten years, but with recent breeding success and dispersal back into old habitats, the importance of this habitat should not be discounted. Potential impact on this species should be considered.
- h) Despite recognising that the final project footprint would be much smaller than the extent of the study areas identified as well as the intention to consider environmentally sensitive areas, it is difficult to assess the true extent of impacts of the proposal on MNES when the final footprints are unknown.

Further information and supporting references are available through the SA EPBC Act Referral Team, in particular s22 [redacted] on (08) 8463 s22 or s22 [redacted] on (08) 8463 s22 or e-mail: DLDEWNREPBCReferrals@sa.gov.au.



Public comment on EPBC Act Referral: 2013/6919 Eyre Iron Pty Ltd/Mining/Koppio Hills South Eastern Eyre Peninsula/SA/Develop an Open Pit Magnetite Mine

1. Introduction

The Threatened Plant Action Group (TPAG) is a program of the Nature Conservation Society of South Australia. TPAG is the leading community-based organisation for the recovery and management of threatened flora in South Australia. Since the 1990's TPAG have continued a long running involvement in the conservation of threatened flora in South Australia and work in partnership with the South Australian Department of Environment, Water and Natural Resources (DEWNR), in protecting and restoring habitat to recover nationally threatened plant species and ecological communities. Hence our submission focuses primarily on the development referral in relation to threatened flora.

TPAG agree with the proponent that the referred development proposes actions that will have a significant impact upon matters of national environmental significance, namely threatened plant species and ecological communities listed under the EPBC Act 1999. We are alarmed by the proposed destruction of already under-conserved native vegetation that provides critical habitat for at least 2 EPBC listed plant species. TPAG are seriously concerned that the mining proposal aims to clear Heritage Agreements that contain listed species such as Tufted bush-pea (*Pultenaea trichophylla*), Silver daisy-bush (*Olearia pannosa* ssp. *pannosa*) and potentially more nationally threatened plant species.

We also feel that due to limitations of the surveys conducted, high potential exists that at least 2 EPBC listed orchid species and a further nominated taxon (TSSC assessment pending) have gone undetected in the project area and therefore have not been addressed by the referral.

There is also high potential for the proposal to result in other environmental impacts. We recognise that part of the proposed mine is to be situated on already cleared agricultural land, however we understand from the referral that a range of associated infrastructure (such as pipelines and roads) will result in environmental impacts over a much wider area. The referral contains a number of oversights and assumptions. Our concerns are detailed below.

2. EPBC listed matters

2.1 Threatened Ecological Communities

Peppermint Box Woodland

Reported to occur within the pipeline route as "small fragmented areas along roadsides". However remnants of this ecological community are typically small and fragmented, and this is a primary reason for its threatened status and listing under the EPBC Act. Consideration needs to be given to restoring remnants of this community rather than invoking poor condition merely as a justification for clearance. We feel it

important that remnants of this ecological community are excluded from mining or developed areas and given adequate buffering. The referrals description of this ecological community in the project area is vague and poorly detailed and reliable clearance decisions cannot be made on the basis of scant information.

2.2 Eyre Peninsula Blue Gum (*Eucalyptus petiolaris*) Woodlands

Described in the referral as occurring “along Wadella Falls Road” as “degraded woodland lacking an understory”. This community is listed as Endangered for South Australia (DEH 2003), and we understand that *Eucalyptus petiolaris* Woodlands have recently been nominated as a nationally threatened ecological community under the EPBC Act (D. Bickerton pers. com. 2013). We feel it important that remnants of this ecological community are excluded from mine or developed areas and given adequate buffering.

3. Nationally Threatened Flora Species

3.1 Tufted bush-pea (*Pultenaea trichophylla*)

The referral indicates that at least 4 subpopulations of the EPBC Endangered Tufted bush-pea (*Pultenaea trichophylla*) occur in the project area. Up to three subpopulations are apparently proposed for clearance, two as part of mining pits and potentially a third as part of pipeline infrastructure. The geographic distribution of *P. trichophylla* is described as being precarious for its survival given the nature of ongoing threats (TSSC, 2009), and the main identified threat to the Tufted Bush-pea is vegetation clearance (Freebairn, 2003; Pobke, 2007; TSSC 2009). The regional recovery plan for *P. trichophylla* lists habitat fragmentation as a direct threat to the species (Pobke 2007).

Recovery actions recommended for *P. trichophylla* include:

- Ensure road, infrastructure or development activities involving disturbance in areas where the tufted Bush-pea occurs do not adversely impact on known populations;
- Investigate formal conservation agreements on private land;
- Suitably control and manage access on private and other land tenure;
- Minimise adverse impacts from land use at known sites (from Pobke 2007, TSSC 2009b).

Clearly the referred mine development conflicts with these recommended actions by proposing population and habitat clearance which is listed as a key threat to *P. trichophylla* in the recovery plan (Pobke 2007), and the approved conservation advice for the species (TSSC 2009b). If approved the proposed clearance will reduce total numbers, reduce area occupied, and further fragment subpopulations. The currently proposed layout of the mine and associated infrastructure will destroy, fragment and decrease the availability and quality of habitat to the extent that the species is likely to decline, by increasing population and habitat fragmentation as well as the insularity of fragments. In doing so, the proposed development will clearly interfere with species recovery by causing further decline and negating community, landholder and government efforts to aid recovery.

We feel that given the ample area of cleared land within the project area there is no need for development of pipelines and roads through habitat remnants. Alternative route that do not result in unnecessary habitat destruction are required. For example, the alignment of proposed pipeline routes could easily be redirected through already cleared land, around habitat remnants.

The proponent claims that by doing revegetation or plantings they will ensure there is no significant impact on this species; however we feel this assertion lacks scientific credibility. Plantings are not ecologically comparable with remnant populations as they lack the resilience or adaptive properties that remnant

populations possess, such as soil seedbanks or symbiotic relationships. Plantings also possess few umbrella benefits for native species (e.g. pollinators) that occur in remnant patches and that may be important to the persistence of listed threatened species. Also, because the survival of plantings beyond prescribed mitigation periods is dubious, their long term survival cannot be guaranteed.

3.2 Metallic sun-orchid (*Thelymitra epipactoides*)

Thelymitra epipactoides is currently listed as Endangered under the EPBC Act and is a priority for regional recovery (Pobke 2007). The species has previously been recorded in the Hundred of Koppio. Due to effort and timing limitations of the conducted flora surveys, namely the limited number of days allocated to looking for orchids during the flowering period, it is likely that this species would have gone undetected. Further survey work at the time of year when orchids are flowering is required to confirm the presence or absence of *T. epipactoides*. We feel that any habitat remnants containing this species should be excluded from the development and given adequate protection buffers.

3.3 Winter spider-orchid (*Caladenia brumalis*)

Caladenia brumalis is currently listed as Vulnerable under the EPBC Act and has previously been recorded near to the project area at Wannilla and Yallunda Flat. Due to effort and timing limitations of the conducted flora surveys it is likely that the species would have gone undetected. We feel that habitat remnants containing this species should be excluded from the development and given adequate protection buffers.

3.4 Lax leek-orchid (*Prasophyllum laxum*)

The last known population of the regionally endemic Lax leek-orchid (*Prasophyllum laxum*) is located in the Koppio Hills and is likely to occur within the proposed project area. Recent expert assessments indicate *P. laxum* is likely to satisfy the criteria for Critically Endangered under the EPBC act, and the species has been nominated to the Threatened Species Scientific Committee for listing consideration. The limitations of the conducted flora survey and the rarity of the species mean it would have gone undetected. We feel that habitat remnants containing this species should be excluded from the development and given adequate protection buffers.

4. Proposed clearance

The Koppio Hills are one of the most cleared districts on Eyre Peninsula. In the Hundred of Koppio 78 % of native vegetation has been cleared and only 8.2% is protected, all in Heritage Agreements on private land (DEH 2005). These figures emphasise how important heritage agreements are in the project area and how their clearance cannot be justified as they now constitute all of the districts protected native vegetation. In this context the clearance of any Heritage Agreements is a drastic and retrograde proposal.

We feel that extreme caution needs to be given to any proposed clearance of remnant vegetation, especially heritage agreements, for the mine or any associated infrastructure. In addition to the EPBC listed species already mentioned numerous state and regionally threatened species rely on such areas for habitat. The proposed removal of native habitat by the proponent is severe given that copious cleared land exists in the area. The proposed layout of mine pits and pipeline routes needs to be designed to avoid or limit native vegetation clearance instead of simply being predicated on the lowest cost for the proponent.

In relation to the referred proposal we recommend the following measures:

- Exclusion of Heritage agreements and other remnant vegetation from mine pit area limits;

- Reduction in the width of pipeline corridor widths from 1km to 200m and avoidance of remnant vegetation with route alignments;
- Provision of adequate buffers for Heritage agreements and other remnant vegetation of at least 200m;
- Provision of undeveloped areas of cleared land to re-establish connectivity between remnant patches (i.e. creation of corridors and linkages).

5. Other Issues

It needs to be kept in mind that revegetation plantings, no matter how well implemented, will never replicate the diversity or ecological functions of remnant vegetation. Despite the smallness or condition of remnants in the area, they have evolved over millennia and have properties that enable resilience and adaptation which cleared agricultural land does not possess. The adequacy of offsets for proposed clearance of critical habitat needs to be evaluated in this context.

It is uncertain whether further remnant vegetation clearance along pipeline 'corridors' has been included in the impact footprint. We are also concerned over the intended destination and likely environmental fate of tailings. It is well known that mine tailings are polluting and the lack of information provided in the referral creates serious concern about the potential pollution of terrestrial or aquatic ecosystems. For example, the referral fails to address any subsequent changes that will occur to surface or ground water, and there is no attempt to address potential impacts on the Tod Wetland system or any listed EPBC species that occur downstream, such as the impacts of tailings on migratory birds that will be attracted to a large water body.

6. Reliability of survey results

Lastly, while the flora surveys undertaken by the proponent appear to be reasonable, it is very likely that significant species have been overlooked or undetected due to the size of the project area and issues of survey effort and timing (e.g. small populations of listed species). Reasonable scope therefore exists for 'pseudo-absences' (missed plant species) in the flora lists on which the proponent has based their development referral. Greater technical detail on the employed survey method and timing would have been useful in verifying the reliability of survey results.

7. Conclusion

Due to the impacts the referred development poses to listed EPBC matters of National Environmental Significance, particularly the nationally endangered *Pultenaea trichophylla*, as well as other listed species and issues not considered or addressed, we feel the action requires statutory regulation and submit that as currently proposed the action is likely to trigger the controlling provisions of the EPBC Act by causing a significant impact on important populations and critical habitat for listed threatened species. We therefore agree with the proponent that the proposed development should be declared a controlled action under the EPBC Act.

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