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## 11.0 Appendices



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## Appendix A: DEWHA Project Referral Advice

### COMMONWEALTH OF AUSTRALIA

#### *ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999*


#### DECISION THAT ACTION IS NOT A CONTROLLED ACTION

I, MARK FLANIGAN, Assistant Secretary, Policy and Compliance Branch, Department of the Environment and Heritage, a delegate of the Minister for the Environment and Heritage for the purposes of section 75 of the *Environment Protection and Biodiversity Conservation Act 1999*, decide that the proposed action, set out in the Schedule, is not a controlled action.

#### SCHEDULE

The proposed action to develop the Koolanooka Direct Shipping Iron Ore Project to mine and process iron ore, Koolanooka, Western Australia, and as described in the referral received under the Act on 24 November 2004 (EPBC 2004/1886).

Dated this 20 day of DECEMBER 2004



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**ASSISTANT SECRETARY  
POLICY AND COMPLIANCE BRANCH  
DEPARTMENT OF THE ENVIRONMENT AND HERITAGE**

## Appendix B: Fauna Desktop Review

Fauna Species	Common name	Status	Koolanooka (ATA Environmental 2004)	Koolanooka (Alan Tingay & Associates, 1996)	Blue Hills (Bamford Consulting Ecologists 2004)
<b>Mammals</b>					
<b>Family Bovidae</b>					
<i>Capra hircus</i> *	Goat		Opp	Evidence at Sites 1, 2, 3, 4.	
<b>Family Canidae</b>					
<i>Vulpes vulpes</i> *	Fox		Opp	Scratchings and scats at Sites 4, 5, 6, 7, 8, 12, 13	
<b>Family Dasyuridae</b>					
<i>Sminthopsis dolichura</i>	Little Long-tailed Dunnart		Site 5, 6		Sites 3, 4, 5
<b>Family Felidae</b>					
<i>Felis catus</i> *	Cat		Opp	Scats at Site 12	
<b>Family Leporidae</b>					
<i>Oryctolagus cuniculus</i> *	Rabbit		Opp	Evidence at all sites	
<b>Family Macropodidae</b>					
<i>Macropus fuliginosus</i>	Western Grey Kangaroo		Opp	Site 13	
<i>Macropus robustus erubescens</i>	Euro		Opp	Scratchings at all sites.	
<i>Macropus rufus</i>	Red Kangaroo		Opp		
<b>Family Molossidae</b>					
<i>Nyctinomus australis</i>	White-striped Mastiff Bat	Status??		Site 1, 4, 12	
<b>Family Muridae</b>					
<i>Mus musculus</i> *	House Mouse		Site 1	Site 1, 3, 5, 7	
<i>Pseudomys hermannsburgensis</i>	Sandy Inland Mouse			Site 4	

<i>Rattus rattus</i> *	Black Rat		Opp		
<b>Family Tachyglossidae</b>					
<i>Tachyglossus aculeatus</i>	Echidna		Opp Scratchings	Scratchings at all sites. Seen at Site 12.	
<b>Family Vespertilionidae</b>					
<i>Chalinolobus gouldii</i>	Gould's Wattle Bat			Site 13	
<i>Vespadelus regulus</i>	Southern Forest Bat			Site 12	
<i>Vespadelus finlaysoni</i>	Finlayson's Cave Bat		Opp		
<b>Birds</b>					
<b>Family Acanthizidae</b>					
<i>Acanthiza apicalis</i>	Inland Thornbill		<input type="checkbox"/>	Sites 1, 2, 4, 5, 7, 8, 9, 10, 11	
<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill		<input type="checkbox"/>	Sites 1, 2, 4, 13	
<i>Acanthiza uropygialis</i>	Chestnut-tailed Thornbill		<input type="checkbox"/>	Sites 1, 2, 3, 4, 5, 6, 8, 9, 11, 12	Sites 1, 4, 5
<i>Aphelocephala leucopsis</i>	Southern Whiteface		<input type="checkbox"/>	Sites 1, 9, 13	
<i>Pyrrholaemus brunneus</i>	Redthroat		<input type="checkbox"/>	Sites 1, 3, 4, 5, 6, 7, 8, 11	Site 3
<i>Smicornis brevirostris</i>	Weebill		<input type="checkbox"/>	Sites 1, 3, 5, 7, 8, 9, 12	<input type="checkbox"/>
<b>Family Acciptridae</b>					
<i>Accipiter fasciatus</i>	Brown Goshawk	Migratory species EPBC ACT 1999	<input type="checkbox"/>		
<i>Aquila audax audax</i>	Wedge-tailed Eagle	Migratory species EPBC ACT 1999	<input type="checkbox"/>	Sites 1, 2, 3, 12, 13	
<i>Circus assimilis</i>	Spotted Harrier	Migratory species EPBC ACT 1999	<input type="checkbox"/>		
<b>Family Aegothelidae</b>					
<i>Aegotheles cristatus</i>	Australian Owlet-nightjar			Site 1	<input type="checkbox"/>
<b>Family Anatidae</b>					
<i>Anas superciliosa</i>	Pacific Black Duck	Migratory species EPBC ACT 1999		Site 12	
<i>Anas gracilis</i>	Grey Teal	Migratory species EPBC ACT 1999		Site 12	
<i>Tadorna tadornoides</i>	Australian Shelduck	Migratory species EPBC ACT 1999	<input type="checkbox"/>	Site 12	
<b>Family Artamidae</b>					
<i>Artamus cinereus</i>	Black-faced Woodswallow		<input type="checkbox"/>	Site 12	
<i>Artamus minor</i>	Little Woodswallow		<input type="checkbox"/>	Sites 3, 4, 12	Site 4
<i>Gymnorhina tibicen</i>	Australian Magpie			Site 9	
<b>Family Campephagidae</b>					

<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike		<input type="checkbox"/>	Site 13	Site 5
<b>Family Caprimulgidae</b>					
<i>Eurostopodus argus</i>	Spotted Nightjar			Sites 1, 13	<input type="checkbox"/>
<b>Family Casuariidae</b>					
<i>Dromaius novaehollandiae</i>	Emu		<input type="checkbox"/>	Site 4, 6, 12, 13.	
<b>Family Caprimulgidae</b>					
<i>Eurostopodus argus</i>	Spotted Nightjar		<input type="checkbox"/>		
<b>Family Cinclostomatidae</b>					
<i>Cinclosoma castanotus</i>	Chestnut Quail-thrush			Sites 7, 9	
<b>Family Climacteridae</b>					
<i>Climacteris rufa</i>	Rufous Treecreeper				<input type="checkbox"/>
<b>Family Columbidae</b>					
<i>Ocyphaps lophotes</i>	Crested Pigeon		<input type="checkbox"/>	Sites 12,13	
<i>Phaps chalcoptera</i>	Common Bronzewing		<input type="checkbox"/>	Sites 8, 9, 10, 11	<input type="checkbox"/>
<b>Family Corvidae</b>					
<i>Corvus bennetti</i>	Little Crow		<input type="checkbox"/>	Sites 1, 2, 3, 5, 6, 9, 10, 11	
<i>Corvus coronoides</i>	Australian Raven		<input type="checkbox"/>	Sites 5, 7, 9, 10, 13	Site5
<b>Family Cracticidae</b>					
<i>Cracticus nigrogularis</i>	Pied Butcherbird		<input type="checkbox"/>	Site 13	Site 5
<i>Cracticus tibicen</i>	Australian Magpie		<input type="checkbox"/>		
<i>Cracticus torquatus</i>	Grey Butcherbird			Site 9, 12, 13	Site 1, 3, 4
<b>Family Dicuridae</b>					
<i>Grallina cyanoleuca</i>	Magpie Lark		<input type="checkbox"/>	Site 13	
<i>Rhipidura fuliginosa</i>	Grey Fan-tail			Sites 1, 2, 3, 4, 7, 8, 9, 10, 11	
<i>Rhipidura leucophrys leucophrys</i>	Willie Wagtail		<input type="checkbox"/>	Sites 4, 12, 13	
<b>Family Falconidae</b>					
<i>Falco berigora</i>	Brown Falcon	Migratory species EPBC ACT 1999	<input type="checkbox"/>	Site 3, 13	
<i>Falco cenchroides</i>	Nankeen Kestrel	Migratory species EPBC ACT 1999	<input type="checkbox"/>	Site 12, 13	
<i>Falco longipennis</i>	Little Falcon	Migratory species EPBC ACT 1999		Site 13	
<b>Family Hirundinidae</b>					
<i>Cheramoeca leucosternus</i>	White-backed Swallow			Site 12	
<i>Petrochelidon nigricans</i>	Tree Martin		<input type="checkbox"/>		

<i>nigricans</i>					
<i>Hirundo neoxena</i>	Welcome Swallow		<input type="checkbox"/>	Sites 2, 12	
<i>Hirundo nigricans</i>	Cliff Swallow			Sites 4, 8, 9,	
<b>Family Maluridae</b>					
<i>Malurus lamberti</i>	Variiegated Fairy-wren		<input type="checkbox"/>		
<i>Malurus leucopterus leucopterus</i>	White-winged Fairy-wren	Vulnerable <i>EPBC Act</i> 1999  Schedule 1 <i>Wildlife Conservation Act</i> 1950	<input type="checkbox"/>		
<i>Malurus splendens</i>	Splendid Fairy-wren		<input type="checkbox"/>	Sites 2, 4, 9, 13	Site 1, 3, 4
<i>Malurus pulcherrimus</i>	Blue Breasted Fairy-wren			Sites 3 & 4	
<b>Family Megapodidae</b>					
<i>Leipoa ocellata</i>	Malleefowl	Vulnerable <i>EPBC Act</i> 1999  Schedule 1 <i>Wildlife Conservation Act</i> 1950		Evidence at Site 2 & 8.	
<b>Family Meliphagidae</b>					
<i>Acanthagenys rufogularis</i>	Spiny-checked Honeyeater			Sites 1, 12	Site 5
<i>Anthochaera carunculata</i>	Red Wattlebird		<input type="checkbox"/>		
<i>Certhionyx variegatus</i>	Pied Honeyeater		<input type="checkbox"/>		
<i>Epthianura aurifrons</i>	Orange Chat		<input type="checkbox"/>		
<i>Epthianura tricolor</i>	Crimson Chat		<input type="checkbox"/>		
<i>Lichmera indistincta</i>	Brown Honeyeater			Site 13	
<i>Lichenostomus leucotis leucotis</i>	White-eared Honeyeater		<input type="checkbox"/>		
<i>Lichenostomus virescens</i>	Singing Honeyeater		<input type="checkbox"/>	Sites 1, 2, 3, 4, 5, 7, 9, 12, 13	Sites 1, 2, 3, 4
<i>Manorina flavigula</i>	Yellow-throated Miner		<input type="checkbox"/>	Sites 1, 13	<input type="checkbox"/>
<i>Melithreptus brevirostris leucogenys</i>	White-fronted Honeyeater		<input type="checkbox"/>		<input type="checkbox"/>
<b>Family Meriopidae</b>					
<i>Merops ornatus</i>	Rainbow Bee-eater	Migratory species <i>EPBC ACT</i> 1999	<input type="checkbox"/>		Site 5

<b>Family Motacillidae</b>					
<i>Anthus novaeseelandiae</i>	Richard's Pipit		<input type="checkbox"/>	Site 12	
<b>Family Pachycephalidae</b>					
<i>Colluricincla harmonica</i>	Grey Shrike-thrush		<input type="checkbox"/>	Sites 1, 2, 5, 7, 8, 9, 11, 12	Sites 1, 2, 3, 4
<i>Oreoica gutturalis</i>	Crested Bellbird		<input type="checkbox"/>	Sites 1, 4, 5, 7, 8, 9, 10, 11	
<i>Pachycephala pectoralis</i>	Golden Whistler			Sites 7, 8, 9	
<i>Pachycephala rufiventris rufiventris</i>	Rufous Whistler		<input type="checkbox"/>		
<b>Family Pardalotidae</b>					
<i>Pardalotus striatus</i>	Striated Pardalote		<input type="checkbox"/>	Site 2	
<b>Family Passeridae</b>					
<i>Taeniopygia guttata</i>	Zebra Finch		<input type="checkbox"/>	Sites 4, 5, 6, 12, 13	
<b>Family Petroicidae</b>					
<i>Drymodes brunneopygia</i>	Southern Scrub Robin			Site 8	
<i>Eopsaltria australis griseogularis</i>	Western Yellow Robin		<input type="checkbox"/>	Site 8	<input type="checkbox"/>
<i>Petroica goodenovii</i>	Red-capped Robin		<input type="checkbox"/>		Site 5
<i>Petroica multicolor</i>	Scarlet Robin				<input type="checkbox"/>
<b>Family Podargidae</b>					
<i>Podargus strigoides</i>	Tawny Frogmouth		<input type="checkbox"/>		<input type="checkbox"/>
<b>Family Podicipedidae</b>					
<i>Poliiocephalus poliocephalus</i>	Hoary-headed Grebe			Site 12	
<i>Tachybaptus novaehollandiae</i>	Australian Grebe		<input type="checkbox"/>		
<b>Family Pomotostomidae</b>					
<i>Pomatostomus superciliosus</i>	White-browed Babbler		<input type="checkbox"/>	Sites 2, 6, 9, 13	
<b>Family Psittacidae</b>					
<i>Barnardius zonarius</i>	Port Lincoln Parrot			Sites 1, 2, 3, 6, 7, 10, 11, 13	
<i>Cacatua roseicapilla</i>	Galah		<input type="checkbox"/>	Sites 1, 9, 13	<input type="checkbox"/>
<i>Cacatua sanguinea sanguinea</i>	Little Corella		<input type="checkbox"/>		
<i>Calyptrorhynchus latirostris</i>	Carnaby's Cockatoo	Schedule 1 <i>Wildlife Conservation Act 1950</i> Endangered <i>EPBC Act 1999</i>	<input type="checkbox"/>		
<i>Platycercus zonarius</i>	Australian Ringneck		<input type="checkbox"/>		Site 5
<i>Psephotus varius</i>	Mulga Parrot		<input type="checkbox"/>	Sites 1, 9, 12, 13	

<b>Family Rallidae</b>					
<i>Fulica atra</i>	Eurasian Coot		□		
<b>Family Sylviidae</b>					
<i>Cincloramphus mathewsi</i>	Rufous Songlark		□		
<b>Family Turnicidae</b>					
<i>Turnix varia</i>	Painted Button Quail			Site 2	
<b>REPTILES</b>					
<b>Family Agamidae</b>					
<i>Caimanops amphiboluroides</i>	Mulga dragon				Sites 1, 3, 5 & Opp
<i>Ctenophorus nuchalis</i>	Central Notted Dragon		Site 1		
<i>Ctenophorus reticulatus</i>			Site 1,5		Site 1 & Opp
<i>Ctenophorus scutulatus</i>	Lozenge Marked Dragon		Site 1 & Opp.		Sites 1, 3, 4 & Opp
<i>Pogona minor</i>	Western Bearded Dragon		Site 1 & Opp		Site 2
<b>Family Boidae</b>					
<i>Antaresia stimsoni stimsoni</i>	Stimson's Python		Opp.		
<b>Family Elapidae</b>					
<i>Demansia psammophis reticulata</i>	Yellow-faced Whipsnake		Opp.		
<i>Pseudechis australis</i>	King Brown Snake			Evidence at Site 1	
<i>Pseudonaja nuchalis</i>	Gwardar		Opp.		
<b>Family Gekkonidae</b>					
<i>Diplodactylus pulcher</i>	Beautiful Gecko		Site 1,2,4 & Opp.		Sites 1,3, 4, 5
<i>Diplodactylus squarrosus</i>			Opp.		
<i>Gehyra variegata</i>	Variegated Dtella		Site 4,5 & Opp.	Sites 1, 6, 8, 13	Sites 1, 2, 4
<i>Heteronotia binoei</i>	Binoe's Gecko		Site 2,4,6,7 & Opp.	Sites 1, 2, 3, 8, 10, 11	Sites 2, 4, 5
<i>Strophurus strophurus</i>			Opp.	Sites 1, 2	
<i>Underwoodisaurus milii</i>	Thick-tailed Gecko		Site 1 & Opp.		
<b>Family Pygopodidae</b>					
<i>Delma australis</i>	Marbled-faced Delma		Opp.	Site 8	Sites 1, 2 & Opp
<b>Family Scincidae</b>					
<i>Cryptoblepharus</i>	Callose-palmed		Opp.	Site 1	Site 3
<i>Plagiocercus richardsoni</i>	snake eyed skink				Opp
<i>Ctenotus mimetes</i>			Site 1, 2		Site 1
<i>Ctenotus uber</i>					Sites 1, 2, 3, 4 & Opp
<i>Ctenotus novboracensis</i>	Leopard Ctenotus				
<i>Ctenotus mitchelli</i>	Mallee Slender	DEC Priority 2	Opp.	Site 6	Sites 2, 3

	Blue-tongued Lizard				
<i>Egernia depressa</i>	Pygmy Spiny-tailed Skink		Site 4,5 & Opp	Sites 6, 8, 11	Site 1 & Opp
<i>Egernia stokesii badia</i>	Western Spiny-tailed Skink	Endangered <i>EPBC Act 1999</i> Schedule 1 <i>Wildlife Conservation Act 1950</i> <u>oedura</u>	Opp.		
<i>Eremiascincus richardsoni</i>					Sites 4, 5
<i>Lerista gerrardii</i>			Site 1,2,7	Sites 1, 7, 8, 9	Site 1, 3, 4 & Opp
<i>Lerista muelleri</i>	Mueller's Lizard		Opp		Site 1 & Opp
<i>Menetia greyii</i>	Common Dwarf Skink		Site 4 & Opp		Sites 3, 4
<i>Morethia butleri</i>	Woodland Morethia Skink		Opp	Sites 9, 12	Site 4
<i>Tiliqua rugosa</i>	Shingleback		Opp		
<b>Family Typhlopidae</b>					
<i>Ramphotyphlops hamatus</i>	Burrowing snake				Site 1
<b>Family Varanidae</b>					
<i>Varanus caudolineatus</i>	Pygmy Monitor		Site 2 and Opp		Site 2
<i>Varanus gouldii</i>	Gould's Goanna				Site 5
<i>Varanus panoptes</i>	Argus Monitor				Opp
<b>Amphibians</b>					
<b>Family Leptodactylidae</b>					
<i>Pseudophryne occidentalis</i>	Orange-crowned Toadlet			Site 13	
<b>Family Myobatrachidae</b>					
<i>Neobatrachus aff. centralis</i>	Desert Trilling Frog				Site 1

## Appendix C: Fauna Habitat Descriptions

SURVEY	TIMING	SITE AND COORDINATES	SITE DESCRIPTION
ATA Environmental 2004	15 <sup>th</sup> -23 <sup>rd</sup> December 2003	Site 1: 50 422804E / 6770340N	Flat, open woodland.
		Site 2: 50 423793E / 6769682N	Sloped topography. Closed heath to open shrubland
		Site 3: 50 422962E / 6771165N	Flat topography. Tall closed shrubland of Acacia species.
		Site 4: 50 422820E / 6771805N	Sloped Topography. Tall Acacia and Allocasuarina shrubland.
		Site 5 50 420999E / 6770635N	Flat, Acacia shrubland.
		Site 6: 50 423581E / 6770532N	Open woodland over tall shrubland situated on a ridge.
		Site 7: 50 422292E / 6771524N	Along the sidewalls of a mine pit.
Alan Tingay & Associates 1996	June 1996	Site 1	York Gum, <i>Eucalyptus loxophleba</i> , and occasional <i>Casuarina cristate</i> , 6-10m tall, 10-30% canopy cover, over mixed shrubs 1.5-2m tall, 2-10% canopy cover, over mixed shrubs, <1m tall 2-10% canopy cover. Leaf litter sparse <2cm deep, scattered under shrubs. Logs and twigs abundant. Banded Ironstone slope with red loam between rocks.
		Site 2	Unstratified mixed shrubland, 1.5-2.5m tall, 70-100% canopy cover. Leaf litter sparse and clumps under shrubs, <2cm deep, twigs and logs. Rocky hilltop.
		Site 3	<i>Acacia</i> spp. 2-4m tall, 10-30% canopy cover with emergent York Gum, <i>Eucalyptus loxophleba</i> < 5m tall, over mixed shrubs, 1-1.5 m tall 2-10% canopy cover, over mixed shrubs <0.5m tall 2-10% canopy cover. Leaf litter very sparse, occasional logs and twigs. Rocky with numerous surface boulders.
		Site 4	<i>Acacia</i> spp., <i>Grevillea</i> sp. and occasional <i>Hakea</i> sp. and Mallee 2-3m tall, 10-30% canopy cover, over seedlings of above species. 0.5-1m tall, 2-10% canopy cover, over dead grass <0.5m tall, 10-30% canopy cover. Leaf litter, terete leaves clumped under shrubs, < 8cm deep. Sand, yellow-brown sandy loam becoming gravelly at 25cm deep.
		Site 5	Mallee and <i>Acacia</i> sp. 4-5m tall, 2-10% canopy cover, over <i>Grevillea</i> spp. 2-3m tall, 10-30% canopy cover, over shrubs 0.5-1.5m tall, 2-10% canopy

			cover, over dead grass <0.5m tall, 10-30% canopy cover. Some sections in lower drainage areas have denser bushes to 1.5m tall. Leaf litter broad and terete leaves, clumped under shrubs to 10cm deep. Soil yellow-brown loam.
		Site 6	<i>Acacia</i> spp. 2-3m tall, 2-10% canopy cover over <i>Dodonaea</i> sp. and <i>Acacia</i> sp. 1-1.5m tall, <2% canopy cover. Leaf litter sparse, clumped mainly terete leaves with dead shrubs and twigs. Soil stony, gravelly, loamy clay flats.
		Site 7	Mallee 3-4m tall 10-30% canopy cover and occasional <i>Acacia</i> sp. 1-1.5m tall <10% canopy cover, over sparse dead grass. Leaf litter clumped under mallees <6cm deep, broad leaves, bark and twigs. Soil, red sandy loam.
		Site 8	Mallee, <i>Allocasuarina campestris</i> and <i>Acacia</i> spp. 3-5m tall 30-70% canopy cover. Leaf litter clumped <4cm deep, broad leaves, twigs and logs. Soil, gravel slopes with rocks.
		Site 9	York Gum, <i>Eucalyptus loxophleba</i> , 5-8m tall, 2-10% canopy cover, over <i>Acacia</i> spp. 2-4m tall, 10-30% canopy cover, over <i>Acacia</i> spp. and <i>Dodonaea</i> sp. 1.2-2m tall, 2-10% canopy cover. Mistletoe, <i>Amyema miquell</i> is common on York Gums. Leaf litter clumped under trees and shrubs, mostly broad terete leaves, < 5cm deep, bark, twigs and numerous logs. Soil red clay loam with some pebbles.
		Site 10	Thickets, 4-6m tall, 70-100% canopy cover, over <i>Acacia</i> spp., 1-1.5m tall, <10% canopy cover. Some areas have dead grass <0.5m tall, 2-10% canopy cover. Leaf litter continuous, broad and terete leaves, bark and twigs <4cm deep. Soil red clay loam with surface granite rocks and pebbles.
		Site 11	<i>Acacia</i> spp., <i>Melaleuca</i> sp. and <i>Allocasuarina campestris</i> , 2-3m tall, 30-70% canopy cover, over <i>Acacia</i> spp. 0.5-1m tall, 2-10% canopy cover. Leaf litter sparse, clumped under shrubs, mainly terete leaves <2cm deep, old branches and logs. Rocky slope with loamy clay soil.
		Site 12	Old mine site including spoil heaps and excavated pit.
		Site 13	Farmland, with or without remnant vegetation.
<b>Bamford Consulting Ecologists 2004</b>	9 – 16 <sup>th</sup> February 2004	Site 1 (WGS 84) 486 240E / 6 776 107 N	Dense shrubland of Narrow-leaf Mulga <i>Acacia linophylla</i> on plain of red loam
		Site 2 489 355E / 6 766 668N	Rocky ridge of banded ironstone. Shallow, rocky soil supported a mixed shrubland of <i>Acacia</i> , <i>Allocasuarina</i> and Myrtaceae species.
		Site 3 489 510E / 6 776 392N	Slopes of mixed red loam and rocky soil at base of rocky ridge. Vegetation mainly a dense shrubland of Narrow-leaf Mulga.
		Site 4 489 738E / 6 776 082N	Red loam plain supporting a low woodland of woollybutt eucalypts with a mid-storey of Narrow-leaf Mulga. A lot of dead wood on the ground.
		Site 5 486 802E / 6 775 651N	Loamy clay soils, forming Gilgai mounds in places, with a low woodland of <i>Melaleuca</i> grading into lignum shrubland with scattered, small eucalypts. Subject to irregular inundation.



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## **Appendix D: Classification of Species under the WA Wildlife Conservation Act**

<b>Classification</b>	<b>Definition</b>
Schedule 1	Fauna that is rare or likely to become extinct
Schedule 2	Fauna that is presumed to be extinct
Schedule 3	Birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction
Schedule 4	Other fauna in need of special protection

## Appendix E: Explanation of Conservation Codes

**Table E-1 Definition of categories described under the EPBC Act.**

Conservation Category	Definition
Extinct	A species is extinct if there is no reasonable doubt that the last member of the species has died.
Extinct in the wild	A species is categorised as extinct in the wild if it is only known to survive in cultivation, in captivity or as a naturalised population well outside its past range; or if it has not been recorded in its known/expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
Critically Endangered	The species is facing an extremely high risk of extinction in the wild in the immediate future.
Endangered	The species is likely to become extinct unless the circumstances and factors threatening its abundance, survival or evolutionary development cease to operate; or its numbers have been reduced to such a critical level, or its habitats have been so drastically reduced, that it is in immediate danger of extinction.
Vulnerable	Within the next 25 years, the species is likely to become endangered unless the circumstances and factors threatening its abundance, survival or evolutionary development cease to operate.
Conservation Dependent	The species is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of five years.

**Table E-2 Definition of Declared Rare and Priority categories.**

Code	Definition
DRF	Declared Rare Flora-Extant Taxa. Taxa which have been adequately searched for and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such.
P1: Priority One	Poorly Known Taxa. Taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
P2: Priority Two	Poorly Known Taxa. Taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
P3: Priority Three	Poorly Known Taxa. Taxa which are known from several populations, and the taxa are not believed to be under immediate threat (i.e. not currently endangered), either due to the number of known populations (generally >5), or known populations being large, and either widespread or protected. Such taxa are under consideration for declaration as 'rare flora' but are in need of further survey.
P4: Priority Four	Rare Taxa. Taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5-10 years.

(From Atkins, 2006, Declared Rare and Priority Flora List 2006, Dept. CALM)

**Table E-3 Explanation of codes for Declared Weeds in Western Australia.**

Priority	Requirements
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Priority	Requirements
<b>P1</b> Prohibits movement	The movement of plants or their seeds is prohibited within the State. This prohibits the movement of contaminated machinery and produce, including livestock and fodder.
<b>P2</b> Aim is to eradicate infestation	Treat all plants to destroy and prevent propagation each year until no plants remain. The infested area must be managed in such a way that prevents the spread of seed or plant parts on or in livestock, fodder, grain, vehicles and/or machinery.
<b>P3</b> Aims to control infestation by reducing area and/or density of infestation	<p>The infested area must be managed in such a way that prevents the spread of seed or plant parts within and from the property, on or in livestock, fodder, grain, vehicles and/or machinery.</p> <p>Treat to destroy and prevent seed set for all plants:</p> <ul style="list-style-type: none"> <li>• within 100 metres inside of the boundaries of the infestation.</li> <li>• within 50 metres of roads and high-water marks on waterways.</li> <li>• within 50 metres of sheds, stock yards and houses.</li> </ul> <p>Treatment must be done prior to seed set each year.</p> <p>Of the remaining infested area:</p> <ul style="list-style-type: none"> <li>• Where plant density is 1-10 per hectare, treat 100% of infestation.</li> <li>• Where plant density is 11-100 per hectare, treat 50% of infestation.</li> <li>• Where plant density is 101-1000 per hectare, treat 10% of infestation.</li> </ul> <p>Properties with less than two hectares of infestation must treat the entire infestation.</p> <p>Additional areas may be ordered to be treated.</p>
<b>P4</b> Aims to prevent infestation spreading beyond existing boundaries of infestation	<p>The infested area must be managed in such a way that prevents the spread of seed or plant parts within and from the property, on or in livestock, fodder, grain, vehicles and/or machinery.</p> <p>Treat to destroy and prevent seed set for all plants:</p> <ul style="list-style-type: none"> <li>• within 100 metres inside of the boundaries of the infested property.</li> <li>• within 50 metres of roads and high-water marks on waterways.</li> <li>• within 50 metres of sheds, stock yards and houses.</li> <li>• Treatment must be done prior to seed set each year. Properties with less than two hectares of infestation must treat the entire infestation.</li> </ul> <p>Additional areas may be ordered to be treated.</p> <p>Special considerations:</p> <p>In the case of P4 infestations where they continue across property boundaries, there is no requirement to treat the relevant part of the property boundaries as long as the boundaries of the infestation as a whole are treated. There must be agreement between neighbours in relation to the treatment of these areas.</p>
<b>P5</b>	Infestations on public lands must be controlled.

(Department of Agriculture and Food, 2006).

## Appendix F: Priority Flora / Flora of Conservation Significance having the potential to occur within the Project area

**Table F-1** Rare and Priority Flora and flora of conservation significance having potential to occur within the Koolanooka Hills survey area.

Family	Species	Status
Chenopodiaceae	<i>Halosarcia bulbosa</i> Paul G.Wilson	Rare
Myoporaceae	<i>Eremophila nivea</i>	Rare
Myoporaceae	<i>Eremophila rostrata</i> ms	Rare
Myoporaceae	<i>Eremophila viscida</i> Endl.	Rare
Myrtaceae	<i>Eucalyptus synandra</i> Crisp	Rare
Anthericaceae	<i>Tricoryne</i> sp. Morawa (G.J. Keighery & N. Gibson 6759)	P1
Asteraceae	<i>Gnephosis setifera</i> P. S. Short	P1
Asteraceae	<i>Millotia dimorpha</i> P.S.Short	P1
Asteraceae	<i>Rhodanthe collina</i>	P1
Myrtaceae	<i>Leptospermum exsertum</i>	P1
Myrtaceae	<i>Melaleuca barlowii</i> Craven	P1
Asteraceae	<i>Fitzwillia axilliflora</i> (Ewart & Jean White) P.S.Short	P2
Myrtaceae	<i>Baeckea</i> sp. Perenjori (J.W. Green 1516)	P2
Myrtaceae	<i>Baeckea</i> sp. Three Springs (M.E. Trudgen 5368)	P2
Rhamnaceae	<i>Stenanthemum poicilum</i> Rye	P2
Aizoaceae	<i>Gunniopsis rubra</i>	P3
Asteraceae	<i>Angianthus micropodioides</i>	P3
Asteraceae	<i>Epitriche demissus</i>	P3
Asteraceae	<i>Podotheca uniseta</i> P. S. Short	P3
Frankeniaceae	<i>Frankenia glomerata</i> Turcz.	P3
Goodeniaceae	<i>Lechenaultia galactites</i> L.W.Sage ms	P3
Mimosaceae	<i>Acacia acanthoclada</i> subsp. <i>glaucescens</i> Maslin	P3
Mimosaceae	<i>Acacia formidabilis</i>	P3
Mimosaceae	<i>Acacia isoneura</i> subsp. <i>Isonaura</i>	P3
Myrtaceae	<i>Enekbatus longistylus</i> Trudgen & Rye ms	P3
Myrtaceae	<i>Verticordia venusta</i> A.S.George	P3
Papilionaceae	<i>Urodon capitatus</i> Turcz.	P3
Poaceae	<i>Austrostipa blackii</i> (C.E.Hubb.) S.W.L.Jacobs & J.Everett	P3
Proteaceae	<i>Grevillea asparagoides</i>	P3
Proteaceae	<i>Grevillea stenostachya</i> C.A.Gardner	P3
Proteaceae	<i>Persoonia pentasticha</i> P.H.Weston	P3
Stylidiaceae	<i>Levenhookia octomaculata</i> F.L.Erickson & J.H.Willis	P3
<b>New Species (DEC survey, 2005)</b>		
Mimosaceae	<i>Acacia</i> sp. Koolanooka falcate (R. Meissner and Y. Caruso 84)	
Anthericaceae	<i>Caesia</i> sp. Koolanooka Hills (R. Meissner and Y. Caruso 78)	
Sapindaceae	<i>Dodonaea</i> sp. Koolanooka Hills (R. Meissner and Y. Caruso 17)	
Rutaceae	<i>Drummondita</i> sp. Koolanooka Hills (R. Meissner and Y. Caruso 69)	
Chenopodiaceae	<i>Lepidosperma</i> sp. Koolanooka (K. Newbey 9336)	
<b>Taxa of Interest (DEC survey, 2005)</b>		
Mimosaceae	<i>Acacia</i> aff. <i>declinata</i>	
Dilleniaceae	<i>Hibbertia</i> aff. <i>exasperata</i>	
Myrtaceae	<i>Eucalyptus ebbanoensis</i> subsp. <i>glauciramula</i>	
Caesalpiniaceae	<i>Labichea lanceolata</i> subsp. <i>brevifolia</i>	
Cyperaceae	<i>Tetaria</i> aff. <i>capillaris</i>	

(Summarised from: FloraBase, 2006; a DEC database Rare Flora search, 2004; Atkins 2006 and previous surveys).

**Table F-2** Rare and Priority Flora and flora of conservation significance having potential to occur within the Blue Hills survey area.

Family	Species	Status
Myrtaceae	<i>Eucalyptus synandra</i> Crisp	Rare
Aizoaceae	<i>Gunniopsis divisa</i> Chinnock	P1
Apiaceae	<i>Hydrocotyle</i> sp. Warriedar (P.G. Wilson 12267)	P1
Asteraceae	<i>Millotia dimorpha</i> P.S.Short	P1
Asteraceae	<i>Rhodanthe collina</i> Paul G.Wilson	P1
Myrtaceae	<i>Chamelaucium</i> sp. Yalgoo (Y. Chadwick 1816)	P1
Myrtaceae	<i>Leptospermum exsertum</i> Joy Thomps.	P1
Myrtaceae	<i>Micromyrtus cuensis</i> J.W.Green ms	P1
Myrtaceae	<i>Melaleuca barlowii</i> Craven	P1
Myrtaceae	<i>Micromyrtus</i> sp. Warriedar (S. Patrick 1879A)	P1
Proteaceae	<i>Grevillea subtiliflora</i> McGill.	P1
Proteaceae	<i>Persoonia kararae</i>	P1
Rhamnaceae	<i>Polianthion collinum</i> Rye [syn. <i>Genus</i> sp. Yalgoo (J.M. Ward s.n. 11/7/1999)]	P1
Apiaceae	<i>Hydrocotyle coorowensis</i> H.Eichler ms	P2
Papilionaceae	<i>Isotropis canescens</i> F.Muell.	P2
Rhamnaceae	<i>Stenanthemum poicilum</i> Rye	P2
Aizoaceae	<i>Gunniopsis rubra</i> Chinnock	P3
Goodeniaceae	<i>Lechenaultia</i> sp. Kokardine (B.H. Smith 177)	P3
Lamiaceae	<i>Spartothamnella</i> sp. Helena & Aurora Range (P.G. Armstrong 155-109)	P3
Mimosaceae	<i>Acacia formidabilis</i>	P3
Mimosaceae	<i>Acacia speckii</i> R.S. Cowan & Maslin	P3
Mimosaceae	<i>Acacia acanthoclada</i> subsp. <i>glaucescens</i> Maslin	P3
Myrtaceae	<i>Calytrix uncinata</i> Craven	P3
Poaceae	<i>Austrostipa blackii</i> (C.E.Hubb.) S.W.L. Jacobs & J.Everett	P3
Proteaceae	<i>Grevillea globosa</i> C.A.Gardner	P3
Proteaceae	<i>Grevillea scabrida</i> C.A.Gardner	P3
Proteaceae	<i>Persoonia pentasticha</i> P.H.Weston	P3
Rhamnaceae	<i>Cryptandra imbricata</i> Rye ms	P3
Stylidiaceae	<i>Levenhookia octomaculata</i> F.L.Erickson & J.H.Willis	P3
	<b>New Species (DEC survey, 2005)</b>	
Mimosaceae	<i>Acacia</i> sp. Karara (C. Godden 14)	P2
Mimosaceae	<i>Acacia woodmaniorum</i> Maslin & Buscumb	DRF
Asteraceae	<i>Calotis</i> aff. <i>cuneifolia</i> (A. Markey & S. Dillon 3447)	
Chenopodiaceae	<i>Lepidosperma</i> sp. Karara (H.Pringle 3865)	
Lamiaceae	<i>Prostanthera</i> aff. <i>campbellii</i>	
Mimosaceae	<i>Acacia</i> aff. <i>coolgardiensis</i>	
Myoporaceae	<i>Eremophila</i> cf. <i>platycalyx</i> A. Markey & S. Dillon 3337)	
Myoporaceae	<i>Eremophila</i> sp. (A. Markey & S. Dillon 3338)	
Rutaceae	<i>Drummondita</i> aff. <i>microphylla</i>	

<b>Taxa of Interest (DEC survey, 2005)</b>		
Adiantaceae	<i>Cheilanthes cf. lasiophyllum x sieberi</i>	New hybrid
Caesalpinaceae	<i>Senna glutinosa</i> spp. <i>chatelainiana</i> x <i>charlesiana</i> (A. Markey & S. Dillon 2412)	New hybrid
Chenopodiaceae	<i>Maireana planifolia</i> x <i>villosa</i>	New hybrid
<b>Taxa of Interest (Woodman survey, 2006b)</b>		
Mimosaceae	<i>Acacia</i> aff. <i>sessilis</i>	Poss. new taxon
Lamiaceae	<i>Prostanthera</i> sp.	Possibly undescribed

Summarised from: FloraBase, 2006; DEC database search, 2004; ATA, 2004; Woodman Environmental Consultants, 2004, 2006a & 2006b; Markey & Dillon, 2006).

## Appendix G: Flora Species Collected from the Koolanooka/Blue Hills Flora Surveys

**Table G-1** List of flora species collected during the current Koolanooka Hills flora surveys.

Family	Species
Adiantaceae	<i>Cheilanthes adiantoides</i>
Amaranthaceae	<i>Ptilotus obovatus</i> <i>Ptilotus polystachyus</i> var. <i>polystachyus</i>
Anthericaceae	<i>Thysanotus manglesianus</i> <i>Thysanotus patersonii</i>
Apiaceae	<i>Trachymene cyanopetala</i>
Asclepiadaceae	<i>Rhyncharrhena linearis</i>
Asteraceae	Asteraceae sp. ?Senecio sp. <i>Lawrencella rosea</i> <i>Myriocephalus guerinae</i> <i>Rhodanthe battii</i> * <i>Sonchus oleraceus</i> <i>Waitzia acuminata</i> var. <i>acuminata</i>
Casuarinaceae	<i>Allocasuarina acutivalvis</i> subsp. <i>prinsepiana</i>
Chenopodiaceae	<i>Maireana carnosa</i> <i>Rhagodia drummondii</i>
Dioscoreaceae	<i>Dioscorea hastifolia</i>
Epacridaceae	<i>Astroloma serratifolium</i>
Euphorbiaceae	<i>Calycopeplus paucifolius</i>
Goodeniaceae	<i>Goodenia ?berardiana</i> <i>Velleia hispida</i>
Isoetaceae	<i>Isoetes inflata</i>
Malvaceae	<i>Sida atrovirens</i>
Mimosaceae	<i>Acacia acuminata</i> <i>Acacia assimilis</i> subsp. <i>assimilis</i> <i>Acacia exocarpoides</i> <i>Acacia nigripilosa</i> subsp. <i>nigripilosa</i> ☞ <i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i> <i>Acacia tetragonophylla</i>
Myoporaceae	<i>Eremophila oldfieldii</i> subsp. <i>oldfieldii</i>
Myrtaceae	<i>Melaleuca fulgens</i> subsp. <i>fulgens</i> <i>Melaleuca nematophylla</i> <i>Melaleuca radula</i>
Papilionaceae	<i>Daviesia hakeoides</i> subsp. <i>hakeoides</i>
Poaceae	<i>Aristida contorta</i> <i>Austrostipa elegantissima</i>

Family	Species
Polygalaceae	<i>Comesperma volubile</i>
Polygonaceae	* <i>Acetosa vesicaria</i>
Proteaceae	<i>Grevillea levis</i>
	<i>Grevillea paradoxa</i>
Sapindaceae	<i>Dodonaea inaequifolia</i>
Solanaceae	<i>Anthocercis anisantha</i> subsp. <i>anisantha</i>
	<i>Solanum ellipticum</i>
Sterculiaceae	<i>Rulingia luteiflora</i>

Classification and nomenclature according to the Western Australian Herbarium (FloraBase, 2007),

Key: \* = introduced species

☞ = flora of interest

**Table G-2** List of flora species collected during the current Blue Hills (Mungada East) flora surveys.

Family	Species
Adiantaceae	<i>Cheilanthes adiantoides</i> <i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>
Amaranthaceae	<i>Ptilotus obovatus</i> <i>Ptilotus obovatus</i> var. <i>obovatus</i> <i>Ptilotus schwartzii</i>
Anthericaceae	<i>Arthropodium dyeri</i>
Apiaceae	<i>Xanthosia bungei</i>
Apocynaceae	<i>Alyxia buxifolia</i>
Asclepiadaceae	<i>Rhyncharrhena linearis</i>
Asteraceae	<i>Calocephalus multiflorus</i> <i>Calotis hispidula</i> <i>Calotis</i> sp. <i>Lawrencella rosea</i> <i>Myriocephalus gueriniae</i> <i>Rhodanthe battii</i> <i>Waitzia acuminata</i> var. <i>acuminata</i>
Boraginaceae	* <i>Echium plantagineum</i> (P1 weed) <i>Trichodesma zeylanicum</i>
Boryaceae	<i>Borya sphaerocephala</i>
Caesalpiniaceae	<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>
Casuarinaceae	<i>Allocasuarina acutivalvis</i> subsp. <i>prinsepiana</i>
Crassulaceae	<i>Crassula colorata</i> var. <i>acuminata</i> <i>Crassula extrorsa</i>
Cyperaceae	<i>Lepidosperma costale</i> ☞ <i>Lepidosperma</i> sp. Blue Hills
Dilleniaceae	<i>Hibbertia arcuata</i>
Droseraceae	<i>Drosera macrantha</i> subsp. <i>macrantha</i>
Epacridaceae	<i>Astroloma serratifolium</i>
Euphorbiaceae	<i>Calycopeplus paucifolius</i>
Goodeniaceae	<i>Goodenia ?berardiana</i> <i>Goodenia berardiana</i> <i>Scaevola spinescens</i>
Lamiaceae	<i>Hemigenia</i> sp. Cue (K.F. Kenneally 47A) <i>Hemigenia</i> sp. Pindar (H. Demarz 7428) <i>Hemigenia</i> sp. Yuna (A.C. Burns 95) <i>Microcorys obovata</i> <i>Prostanthera patens</i>
Malvaceae	<i>Sida atrovirens</i> <i>Sida calyxhymentia</i> <i>Sida excedentifolia</i> MALVACEAE sp.
Mimosaceae	<i>Acacia acuminata</i> <i>Acacia aneura</i> var. <i>aneura</i> <i>Acacia aneura</i> var. ? <i>argentea</i> <i>Acacia aneura</i> var. <i>argentea</i> <i>Acacia aneura</i> var. <i>microcarpa</i> <i>Acacia anthochaera</i> <i>Acacia assimilis</i> subsp. <i>assimilis</i> <i>Acacia aulacocarpa</i> <i>Acacia aulacophylla</i>

Family	Species
	<i>Acacia ayersiana</i>
	<i>Acacia coolgardiensis</i> subsp. <i>effusa</i>
Myoporaceae	<i>Acacia exocarpoides</i> <i>Acacia murrayana</i> <i>Acacia ramulosa</i> var. <i>ramulosa</i> ☞ <i>Acacia woodmaniorum</i> (DRF) <i>Acacia tetragonophylla</i> <i>Eremophila clarkei</i> <i>Eremophila latrobei</i> subsp. <i>latrobei</i> <i>Eremophila oldfieldii</i> subsp. <i>oldfieldii</i> <i>Eremophila</i> sp.
Myrtaceae	<i>Aluta aspera</i> subsp. <i>hesperia</i> <i>Eucalyptus ewartiana</i> <i>Eucalyptus loxophleba</i> subsp. <i>supralaervis</i> <i>Melaleuca nematophylla</i> <i>Micromyrtus obovata</i> ☞ <i>Micromyrtus acuta</i> (P1) ☞ <i>Micromyrtus trudgenii</i> (P3) <i>Thryptomene decussata</i>
Papilionaceae	<i>Gastrolobium laytonii</i> <i>Mirbelia bursarioides</i>
Phormiaceae	<i>Dianella revoluta</i> var. <i>divaricata</i>
Plantaginaceae	<i>Plantago debilis</i>
Poaceae	<i>Austrodanthonia caespitosa</i> * <i>Pentaschistis airoides</i> * <i>Pentaschistis airoides</i> subsp. <i>airoides</i>
Proteaceae	<i>Grevillea extorris</i> <i>Grevillea obliquistigma</i> subsp. <i>obliquistigma</i> <i>Hakea invaginata</i> <i>Hakea recurva</i> subsp. <i>recurva</i> ☞ <i>Persoonia pentasticha</i> (P3) ☞ <i>Cryptandra imbricata</i> (P3)
Rhamnaceae	* <i>Galium spurium</i>
Rubiaceae	<i>Drummondita microphylla</i>
Rutaceae	<i>Philotheca brucei</i> subsp. <i>brucei</i> <i>Philotheca deserti</i> subsp. <i>deserti</i> <i>Philotheca sericea</i>
Santalaceae	<i>Exocarpos aphyllus</i>
Sapindaceae	<i>Dodonaea inaequifolia</i> <i>Dodonaea pachyneura</i> <i>Dodonaea petiolaris</i> <i>Dodonaea viscosa</i> subsp. <i>spatulata</i>
Solanaceae	<i>Solanum ellipticum</i> <i>Solanum lasiophyllum</i>

Classification and nomenclature according to the Western Australian Herbarium (FloraBase, 2007),

Key: \* = introduced species

☞ = flora of interest

**Table G-3** List of flora species collected during the current Blue Hills (Mungada West) flora surveys.

Family	Species
Adiantaceae	<i>Cheilanthes adiantoides</i>
Amaranthaceae	<i>Ptilotus exaltatus</i> <i>Ptilotus obovatus</i> var. <i>obovatus</i>
Anthericaceae	<i>Thysanotus manglesianus</i>
Asteraceae	? <i>Waitzia</i> sp. <i>Olearia pimeleoides</i> <i>Rhodanthe</i> sp.
Caesalpiniaceae	<i>Senna artemisioides</i> subsp. <i>filifolia</i> <i>Senna artemisioides</i> subsp. x <i>artemisioides</i>
Chenopodiaceae	<i>Maireana tomentosa</i> subsp. <i>tomentosa</i> <i>Maireana trichoptera</i> <i>Maireana villosa</i> <i>Rhagodia ?drummondii</i> <i>Rhagodia</i> sp. <i>Sclerolaena fusiformis</i> <i>Sclerolaena uniflora</i>
Cupressaceae	<i>Callitris columellaris</i>
Dilleniaceae	<i>Hibbertia arcuata</i>
Droseraceae	<i>Drosera macrantha</i> subsp. <i>macrantha</i>
Euphorbiaceae	<i>Calycopeplus paucifolius</i>
Goodeniaceae	<i>Scaevola spinescens</i>
Lamiaceae	<i>Prostanthera magnifica</i> <i>Prostanthera patens</i>
Loranthaceae	<i>Amyema gibberula</i> <i>Amyema gibberula</i> var. <i>tatei</i> <i>Lysiana casuarinae</i>
Malvaceae	<i>Sida arenicola</i> <i>Sida atrovirens</i>
Mimosaceae	<i>Acacia ?coolgardiensis</i> subsp. <i>coolgardiensis</i> <i>Acacia acuminata</i> <i>Acacia aneura</i> var. <i>argentea</i> <i>Acacia aneura</i> var. <i>major</i> <i>Acacia anthochaera</i> <i>Acacia assimilis</i> subsp. <i>assimilis</i> <i>Acacia aulacophylla</i> <i>Acacia burkittii</i> <i>Acacia coolgardiensis</i> subsp. <i>effusa</i> <i>Acacia exocarpoides</i> <i>Acacia obtecta</i> <i>Acacia ramulosa</i> var. <i>linophylla</i> <i>Acacia ramulosa</i> var. <i>ramulosa</i> <i>Acacia sclerosperma</i> <i>Acacia tetragonophylla</i> ☞ <i>Acacia woodmaniorum</i> (DRF)
Myoporaceae	? <i>Eremophila ?decipiens</i> subsp. <i>decipiens</i> <i>Eremophila clarkei</i> <i>Eremophila exilifolia</i> <i>Eremophila georgei</i> <i>Eremophila latrobei</i> subsp. <i>latrobei</i>
Myrtaceae	<i>Aluta aspera</i> subsp. <i>hesperia</i> <i>Eucalyptus loxophleba</i> subsp. <i>supralaevis</i>

Family	Species
	<i>Melaleuca hamata</i>
	<i>Melaleuca leiocarpa</i>
	<i>Melaleuca nematophylla</i>
	☞ <i>Micromyrtus acuta</i> (P1)
	☞ <i>Micromyrtus trudgenii</i> (P3)
	<i>Thryptomene costata</i>
Orchidaceae	<i>Cyanicula amplexans</i>
Papilionaceae	<i>Mirbelia bursarioides</i>
Phormiaceae	<i>Dianella revoluta</i> var. <i>divaricata</i>
Pittosporaceae	<i>Pittosporum angustifolium</i>
Poaceae	<i>Austrostipa scabra</i>
	<i>Monachather paradoxus</i>
	POACEAE sp.
Polygalaceae	<i>Comesperma integerrimum</i>
Proteaceae	<i>Grevillea obliquistigma</i> subsp. <i>obliquistigma</i>
	<i>Hakea recurva</i> subsp. <i>recurva</i>
	☞ <i>Persoonia pentasticha</i> (P3)
Rhamnaceae	☞ <i>Cryptandra imbricata</i> (P3)
Rutaceae	<i>Drummondita microphylla</i>
	<i>Philotheca brucei</i> subsp. <i>brucei</i>
	<i>Philotheca deserti</i> subsp. <i>deserti</i>
	<i>Philotheca ?sericea</i>
	<i>Philotheca sericea</i>
Santalaceae	<i>Exocarpos aphyllus</i>
	<i>Santalum acuminatum</i>
	<i>Santalum lanceolatum</i>
Sapindaceae	<i>Dodonaea inaequifolia</i>
	<i>Dodonaea petiolaris</i>
Solanaceae	<i>Solanum ellipticum</i>
	<i>Solanum ?lasiophyllum</i>
	<i>Solanum lasiophyllum</i>
	<i>Solanum nummularium</i>

Classification and nomenclature according to the Western Australian Herbarium (FloraBase, 2007),

Key: \* = introduced species

☞ = flora of interest

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## Appendix H: Priority Flora Recorded from the Koolanooka Hills and Blue Hills Survey Areas

### Koolanooka Hills

No Priority taxa were recorded at the Koolanooka Hills site surveyed.

### Blue Hills

#### *Acacia woodmaniorum* Declared Rare Flora

*Acacia woodmaniorum* ms (**DRF**) (Mimosaceae) is a species that appears to be restricted to the Blue Hills area. This species is described below by an adapted version of that provided by Bruce Maslin (*Acacia* specialist) for the Holotype specimen (PERTH 07414897) at the Western Australian Herbarium.

*A. woodmaniorum* is an intricately branched prickly harsh shrub 1-1.5 (-2) m tall. The bark is grey and slightly rough. The new shoots are red when first initiated. The branchlets are light green or yellow at extremities, the decurrent phyllodes are glaucous and more or less lightly pruinose. The marginal nerve of phyllodes is red (young), ageing to yellow. Three spines occur on angles of the free portion of the phyllodes, and are pale red when young, aging to brown. The dead decurrent phyllodes are grey and persist on branches below living crown. The peduncles are often ringed red and the wattle flowers are yellow.

#### *Cryptandra imbricata* Rye ms, Priority 3

*Cryptandra imbricata* Rye ms (**P3**) (Rhamnaceae) is a spinescent shrub growing from 0.3–1.5 m high. The flowers are white, occurring from July to September. It grows on red/brown loam or sand on flats (FloraBase, 2007).

#### *Micromyrtus acuta* Rye, Priority 1

*Micromyrtus acuta* is a rounded shrub growing to 0.5 – 2.5 m high. The leaves are tiny (up to 3 mm long and 1 mm wide) and shaped like a tear drop (wide at one end and narrow at the other). It produces small white flowers from around July to September and occurs on a number of different substrates, including ironstone.

#### *Micromyrtus trudgenii* Priority 3

*Micromyrtus trudgenii* is an erect, open and straggly weeping shrub growing to 0.5 – 2 m tall. This species has small, linear-oblong leaves that tend to grow in dense clusters and then fall as they begin to age. The shrub produces yellow flowers, which have been noted in July and September. The flowers are small and tubular with five lobes, cream to yellow in colour. *Micromyrtus* sp. Warriedar was previously known from about 21 populations at Karara Station and the central Tallering Land System including Blue Hills. (This taxa was recorded at Mungada East and Mungada West).

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### *Persoonia pentasticha*, Priority 3

*Persoonia pentasticha* is an erect, spreading shrub growing to between 0.4 to 1.8 m in height. The flowers are yellow and are produced from August to November. It grows on sandy loam at the base of granite outcrops. *Persoonia pentasticha* was previously known from about 31 populations at Koolanooka Hills and the central Tallering Land System including Blue Hills. (This taxa was recorded at Mungada East and Mungada West).

## Appendix J: *Aboriginal Heritage Act, 1972* Section 18 Approval



Minister for Consumer and Employment Protection; Indigenous Affairs;  
Minister Assisting the Minister for Public Sector Management;  
Leader of the House in the Legislative Assembly

Our Ref: 0321145

Mr Brett Manning  
Company Secretary & General Manager of Administration  
Midwest Corporation Ltd  
PO Box 1915  
WEST PERTH WA 6872

Dear Mr Manning

### **ABORIGINAL HERITAGE ACT 1972 - SECTION 18 - MINING OPERATION - KOOLOONOOKA HILLS - SOUTHEAST OF GERALDTON**

I refer to the Notice of 22 October 2003 given by you, Mr Brett Manning, to the Aboriginal Cultural Material Committee (ACMC) advising that you require to use the land described in Schedule 1 of the Notice as Mining Leases M70/1012, M70/1013 and M70/1014 (the land) for a purpose described in Schedule 2 of the Notice to undertake mining operations through an extension of the existing open pit operations and the recovery of a magnetite iron ore concentrate from the mine ore processing site (the purpose).

In accordance with my powers under section 18(3) of the *Aboriginal Heritage Act 1972* (AHA), and following consideration of recommendations of the ACMC, I hereby grant consent to the use of the land for the purpose, subject to the conditions set out below.

On current knowledge, the purpose will impact upon Aboriginal heritage site DIA 4496 (Koolanooka Hills).


#### Conditions of Consent

That Midwest Corporation Ltd:

- Ensure that all employees and contractors are advised of their obligations and responsibilities under the *Aboriginal Heritage Act 1972*.
- Ensure that a thorough archaeological investigation is undertaken for those areas it intends to mine or clear for infrastructure in the future that have not been previously disturbed by mining.
- Provide the Registrar of Aboriginal Sites (the Registrar) at the completion of the development proposal a written report outlining whether and to what extent the development has impacted on

## Appendix K: Midwest Corporation Pty Ltd Groundwater Licence

File No: MG88


**Water and Rivers Commission**  
 Government of Western Australia

Page 1 of 1  
Instrument No. GWL159255(1)

### LICENCE TO TAKE WATER

Granted by the Commission under section 5C of the Rights in Water and Irrigation Act 1914

<b>Licensee(s)</b>	MIDWEST CORPORATION LIMITED		
<b>Description of Water Resource</b>	Gascoyne Combined - Fractured Rock West - Alluvium	<b>Annual Water Entitlement</b>	12000 kL
<b>Location of Water Source</b>	Lot 5996 On Plan 226759 - Volume/Folio 1306/369 - Lot 5996 Koolanooka		
<b>Authorised Activities</b>	<b>Taking of water for</b>	<b>Location of Activity</b>	
	Earthwork and construction purposes	Lot 5996 On Plan 226759 - Volume/Folio 1306/369 - Lot 5996 Koolanooka	
<b>Duration of Licence</b>	From 28 September 2005 to 27 September 2010		

**This Licence is subject to the following terms, conditions and restrictions:**

- 1 That the licensee shall allow access, in an agreed manner, by Water And Rivers Commission personnel for the purposes of inspection at any time.
- 2 That the licensee records salinity readings of the bore at the end of March and September each year. These readings are to be forwarded to the Water and Rivers Commission following each reading.
- 3 The Water and Rivers Commission, at its discretion, may direct changes to be made to the monitoring programme at any time.
- 4 That should the licensee's draw adversely affect the aquifer or other users in the area, the Water and Rivers Commission may reduce the amount that may be drawn.
- 5 That should the licensee's draw adversely affect other users, the licensee may be required to make good the supply to the affected users to the satisfaction of the Water and Rivers Commission.
- 6 The licensee shall investigate, report on, prevent, mitigate or repair damage which in the opinion of the Commission has been caused by or results from the activity authorised by this licence.
- 7 That the bore is not permitted to run to waste.
- 8 Approval by the Water and Rivers Commission is to be obtained prior to the construction of additional and replacement wells and the modification or refurbishment of existing wells.

**End of terms, conditions and restrictions**

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**This Licence is granted subject to the Rights in Water and Irrigation Regulations 2000**

## 12.0 Glossary of Terms and Abbreviations

AHD – Australian Height Datum  
ANZECC – Australian and New Zealand Environment and Conservation Council  
ARMCANZ – Agricultural and Resource Management Council of Australia and New Zealand  
*ARRP Act* – Agriculture and Related Resources Protection Act, 1976  
CALM – Department of Conservation and Land Management  
CSIRO – Commonwealth Scientific and Industrial Research Organisation  
DEC – Department of Environment and Conservation  
DoE – Department of Environment  
DIA – Department of Indigenous Affairs  
DoIR – Department of Industry and Resources  
DRF – Declared Rare Flora  
DEWHA – Department of Environment and Heritage  
DSO – Direct Shipping Ore  
EIA – Environmental Impact Assessment  
EMP – Environmental Management Plan  
EPA – Environmental Protection Authority  
*EPBC Act* – Environment Protection and Biodiversity Conservation Act, 1999  
GL - gegalitres:  $1 \times 10^6 \text{ m}^3$   
PER – Public Environmental Review  
RL – Relative Level  
ROM – Run of Mine  
TDS – Total Dissolved Solids  
TEC –Threatened Ecological Community  
tph – tonnes per hour

## 13.0 LIST OF TECHNICAL APPENDICES (ATTACHED DISK)

- Appendix 13.1 Alan Tingay & Associates (1996) *Vertebrate Fauna Koolanooka Mine Site Morawa*. Report No 96/53. Prepared for Kingstream Resources N.L.
- Appendix 13.2 ATA Environmental (2004a) *Vegetation and Flora Assessment Koolanooka*. Report No 2004/23. Prepared for Midwest Corporation
- Appendix 13.3 ATA Environmental (2004c) *Fauna Assessment Koolanooka*. Report No. 2004/40 Prepared for Midwest Corporation
- Appendix 13.4 Bamford Consulting Ecologists (2004) *Blue Hills Fauna Assessment*. Prepared for Midwest Corporation
- Appendix 13.5 Bamford Consulting Ecologists (2006b) *Mt Karara/Mungada Haul Road; Fauna Assessment*. Unpublished report prepared for Woodman Environmental Consulting Pty Ltd.
- Appendix 13.6 Dustcheck Brochure on Lignosulphate Polymer, Rainstorm, Perth
- Appendix 13.7 Bennett Environmental Consulting (2004) *Flora and Vegetation Blue Hills*. Prepared for Midwest Corporation.
- Appendix 13.8 Bond, K. (2007) *Greenhouse Gas Assessment. Koolanooka/Blue Hills Remnant Direct Shipping Iron Ore (DSO) Mining Project*. Prepared for ecologia Environment.
- Appendix 13.9 Ecologia Environment (2007a), Unpublished, *Koolanooka Hills/Blue Hills Flora and Vegetation Survey*, ecologia Environment, Perth
- Appendix 13.10 Ecologia Environment (2007b), Unpublished, *Koolanooka/Blue Hills DSO Mining Project Short Range Endemic Biological Assessment* ecologia Environment, Perth
- Appendix 13.11 Ecologia Environment (2007c), Unpublished, *Risk assessment for potential impact to Stygofauna on the DSO project*, ecologia Environment, Perth
- Appendix 13.12 Ecologia Environment (2007d), Unpublished, *Risk assessment for potential impact to Troglifauna on the DSO project*, ecologia Environment, Perth
- Appendix 13.13 Hames Consulting Group (2003) *Section 18 Application under Aboriginal Heritage Act (1972) To Undertake Mining Operations at Koolanooka Hills Western Australia Archaeological Survey and Pandawn Descendants*. Prepared for Midwest Corporation.
- Appendix 13.14 O'Connor R. (1996) *Report on an Ethnographic Survey of Exploration Lease E70/1212 at Koolanooka Hills and Exploration Lease E59/462 at Blue Hills*. Prepared for Kingstream Resources N.L
- Appendix 13.15 Quartermaine G. (1996) *Archaeological Site Survey. Report on a Preliminary Archaeological Investigation for Aboriginal Sites Midwest Iron and Steel Project Areas, Mullewa*. Prepared for Kingstream Resources N.L.
- Appendix 13.16 Rockwater Pty Ltd (2004a) *Assessment of Groundwater Supplies for proposed Mining of Iron Ore at Koolanooka*. Unpublished report prepared for Midwest Corporation Ltd.
- Appendix 13.17 Rockwater Pty Ltd (2004b) *Assessment of Groundwater Supplies for proposed Mining of Haematite Iron Ore at Koolanooka (Stage 1)*. Unpublished report prepared for Midwest Corporation Ltd.
- Appendix 13.18 Rockwater Pty Ltd (2006) *Results of groundwater exploration drilling at Koolanooka and Blue Hills*. Unpublished report prepared for Midwest Corporation Ltd.
- Appendix 13.19 Rockwater Pty Ltd (2007) *Results of bore census, air lifting and test pumping at Koolanooka & Blue Hills 2007-004*. Unpublished report prepared for Midwest Corporation Ltd.

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- Appendix 13.20 Sinclair Knight Mertz (2006) *Koolanooka Dust Modelling and Impact Assessment*. Prepared for Midwest Corporation Ltd.
- Appendix 13.21 WA Chemistry Centre (2006). Unpublished Report for Ecologia Environment on acid sulfate soil testing by Suspension Peroxide Oxidation Combined Acidity and Sulfate method (SPOCAS), WA Chemistry Centre, Perth.
- Appendix 13.22 Western Heritage Research (2005), Report of an archaeological survey of the proposed Blue Hills haul road and Morawa rail siding. Prepared for Midwest Corporation.
- Appendix 13.23 *ecologia* Environment (2007), Midwest Corporation Limited DSO project Environmental Scoping Document, *ecologia* Environment, Perth.
- Appendix 13.24 *ecologia* Environment (2008a), Midwest Corporation Limited DSO project Environmental Management Plan, *ecologia* Environment, Perth.
- Appendix 13.25 *ecologia* Environment (2008b), Midwest Corporation Limited DSO project Environmental Management System, *ecologia* Environment, Perth.
- Appendix 13.26 *ecologia* Environment (2008c), Midwest Corporation Limited DSO project Closure Plan, *ecologia* Environment, Perth.
- Appendix 13.27 *ecologia* Environment (2008d), Midwest Corporation Limited DSO project Karara Camp Environmental Management Plan, *ecologia* Environment, Perth.
- Appendix 13.28 *ecologia* Environment (2007), Midwest Corporation Limited DSO project Threatend Species Management Plan, *ecologia* Environment, Perth.
- Appendix 13.29 *Ecologia* Environment (2008f), Unpublished, *Koolanooka / Blue Hills DSO Mining Project Stygofauna Assessment Survey*, *ecologia* Environment, Perth
- Appendix 13.30 *Ecologia* Environment (2008g), Unpublished, *Koolanooka / Blue Hills DSO Mining Project Troglifauna Biological Assessment*, *ecologia* Environment, Perth