APPENDIX SIX: FLORA INVENTORY

Table 40: Flora inventory

SPECIES	Cons. Code	RL1301	RL1302	RL1303	RL1304	RL1305	RL1306	RL1307	RL1308	RL1309	RL1310	RL1311	RL1312	RL1313	RL1314	RL1315	RL1316	RL1317	RL1318	RL1319	RL1320	RL1321	RL1322	RL1323	RL1324	RL1325	RL1326	RL1327	RL1328	RL1329	RL1330	RL1331	RL1332	RL1333	RL1334	RL1335	RL1336	RL1337	RL1338	RL1339	RL1340	RL1341	RL1342	RL1343	RL1344	OPP
Acanthaceae																																													
Dicladanthera forrestii											+																																		
Dipteracanthus australasicus			+																																										
Dipteracanthus australasicus subsp. *australasicus*																																		+												
Rostellularia adscendens var. *clementii*																													+					+												
Amaranthaceae																																													
Alternanthera nana			+								+																		+	+				+					+		+				
Alternanthera nodiflora																																													+
Amaranthus undulatus			+																																										
Gomphrena cunninghamii																																													+
Ptilotus astrolasius						+														+				+	+															+			+			
Ptilotus auriculifolius						+									+																												+			
Ptilotus calostachyus						+	+	+				+			+		+								+				+				+							+		+		+		
Ptilotus fusiformis																							+														+							+			
Ptilotus nobilis subsp. *nobilis*								+		+						+	+		+	+				+	+			+			+		+							+	+	+		
Ptilotus obovatus								+	+											+	+			+	+					+	+		+		+							+	+		
Ptilotus rotundifolius					+	+																				+										+								+		
Ptilotus schwartzii var. *schwartzii*				+																																								+		
Ptilotus subspinescens	P3									+									+																											
Apocynaceae																																													
Cynanchum floribundum																																													+
Rhyncharrhena linearis																								+													+							+		+	
Sarcostemma viminale subsp. *australe*																																									+					
Araliaceae																																													
Trachymene oleracea														+																														+		
Asteraceae																																													
**Bidens bipinnata*											+																																		
Blumea tenella																																			+											
Centipeda minima subsp. *macrocephala*																																													+
**Flaveria trinervia*											+																		+					+										
Minuria integerrima																																													+
Peripleura arida																																			+										
Peripleura virgata								+																																					
Pluchea dentex																													+											+					
Pluchea rubelliflora			+								+																		+											+					
Pterocaulon sphacelatum			+					+			+																		+	+				+					+	+			+		
Rutidosis helichrysoides																													+																
**Sigesbeckia orientalis*																													+																
Streptoglossa bubakii																																							+						
Streptoglossa decurrens																																								+				+		

SPECIES	Cons. Code	RL1301	RL1302	RL1303	RL1304	RL1305	RL1306	RL1307	RL1308	RL1309	RL1310	RL1311	RL1312	RL1313	RL1314	RL1315	RL1316	RL1317	RL1318	RL1319	RL1320	RL1321	RL1322	RL1323	RL1324	RL1325	RL1326	RL1327	RL1328	RL1329	RL1330	RL1331	RL1332	RL1333	RL1334	RL1335	RL1336	RL1337	RL1338	RL1339	RL1340	RL1341	RL1342	RL1343	RL1344	OPP
Boraginaceae																																													
Heliotropium chrysocarpum															+																															
Heliotropium cunninghamii																																										+			
Heliotropium inexplicitum						+																																					+		
Trichodesma zeylanicum var. *zeylanicum*					+										+															+											+				
Brassicaceae																																													
Lepidium pedicellosum																																													+
Capparaceae																																													
Capparis lasiantha			+					+			+		+			+	+													+	+			+	+		+	+				+		
Capparis spinosa var. *nummularia*																																													+
Capparis umbonata																								+										+								+			
Caryophyllaceae																																													
Polycarpaea corymbosa var. *corymbosa*		+				+																									+											+	+		
Polycarpaea holtzei						+																												+									+		
Polycarpaea longiflora																																		+											
Celastraceae																																													
Stackhousia intermedia																			+																										
Stackhousia muricata																																	+												
Chenopodiaceae																																													
Atriplex bunburyana																																													+
Dissocarpus paradoxus																																													+
Dysphania rhadinostachya																																			+									+		
Maireana ?georgei				+									+							+					+		+					+		+					+					
Maireana melanocoma										+											+				+		+							+										
Maireana triptera																				+																										
Rhagodia eremaea																				+																										
Sclerolaena cuneata																																													+
Sclerolaena densiflora																+											+					+													
Sclerolaena eriacantha										+						+			+								+					+		+									+		
Tecticornia ?auriculata																																													+
Cleomaceae																																													
Cleome viscosa						+		+			+																																+			
Convolvulaceae																																													
Bonamia erecta						+											+																										+			
Bonamia sp. Dampier (A.A. Mitchell PRP 217)					+	+									+							+																					+		
Convolvulus remotus			+								+																																			
Duperreya commixta			+	+						+	+									+			+	+	+				+	+					+						+		+	
Evolvulus alsinoides var. *decumbens*			+								+																			+	+										+			
Evolvulus alsinoides var. *villosicalyx*		+	+		+				+										+					+	+						+									+		+	+	
Ipomoea plebeia			+																																											

SPECIES	Cons. Code	RL1301	RL1302	RL1303	RL1304	RL1305	RL1306	RL1307	RL1308	RL1309	RL1310	RL1311	RL1312	RL1313	RL1314	RL1315	RL1316	RL1317	RL1318	RL1319	RL1320	RL1321	RL1322	RL1323	RL1324	RL1325	RL1326	RL1327	RL1328	RL1329	RL1330	RL1331	RL1332	RL1333	RL1334	RL1335	RL1336	RL1337	RL1338	RL1339	RL1340	RL1341	RL1342	RL1343	RL1344	OPP
Polymeria ambigua			+								+				+			+																											
Polymeria longifolia																												+																	
Cucurbitaceae																																													
Cucumis maderaspatanus											+																			+															
Cyperaceae																																													
Bulbostylis barbata					+	+										+																	+									+		
Bulbostylis turbinata									+																																				
Cyperus bifax											+																																		
Cyperus cunninghamii subsp. *cunninghamii*																																													+
Cyperus vaginatus			+																																										
Fimbristylis dichotoma					+	+																									+		+										+		
Euphorbiaceae																																													
Euphorbia ?alsiniflora											+																																		
Euphorbia aff. *australis*			+												+																															
Euphorbia alsiniflora			+																																+			+							
Euphorbia australis											+																																		
Euphorbia biconvexa																														+															
Euphorbia boophthona					+	+																																					+		
Euphorbia tannensis subsp. *eremophila*											+							+	+					+																					
Fabaceae																																													
Acacia ancistrocarpa														+						+		+				+			+		+		+							+		+	+		
Acacia aneura																							+			+							+				+				+			+	
Acacia aptaneura				+			+		+				+										+			+			+		+	+			+	+				+			+	
Acacia atkinsiana													+				+					+	+		+	+	+		+							+						+		+	
Acacia ayersiana																										+										+									
Acacia bivenosa		+	+	+						+	+		+	+	+	+		+	+	+	+	+	+	+	+		+				+				+		+	+		+	+	+	+		
Acacia citrinoviridis			+								+																			+	+				+						+		+		
Acacia colei var. *colei*																																												+		
Acacia coriacea subsp. *pendens*											+																																		
Acacia cowleana																																									+		+			
Acacia dictyophleba								+																																		+		+	+		
Acacia elachantha								+																																						
Acacia exilis				+								+		+	+			+	+			+	+	+	+	+							+	+			+	+		+	+	+		+		
Acacia inaequilatera		+			+	+									+																												+		
Acacia kempeana		+		+	+									+									+			+			+				+							+		+		
Acacia maitlandii							+						+	+	+								+							+								+			+		+	+		
Acacia marramamba													+																																	
Acacia monticola			+																											+												+			
Acacia pruinocarpa												+										+											+			+						+		+	
Acacia pyrifolia var. *pyrifolia*			+								+																																		

SPECIES	Cons. Code	RL1301	RL1302	RL1303	RL1304	RL1305	RL1306	RL1307	RL1308	RL1309	RL1310	RL1311	RL1312	RL1313	RL1314	RL1315	RL1316	RL1317	RL1318	RL1319	RL1320	RL1321	RL1322	RL1323	RL1324	RL1325	RL1326	RL1327	RL1328	RL1329	RL1330	RL1331	RL1332	RL1333	RL1334	RL1335	RL1336	RL1337	RL1338	RL1339	RL1340	RL1341	RL1342	RL1343	RL1344	OPP
Acacia rhodophloia																																														+
Acacia spondylophylla																																														+
Acacia synchronicia		+		+	+					+		+		+		+		+		+	+			+	+	+	+								+	+	+			+	+			
Acacia tenuissima																																										+				
Acacia tetragonophylla		+		+	+				+				+		+	+				+			+			+				+						+					+		+	
Acacia tumida var. *pilbarensis*											+																			+															
Acacia xiphophylla				+																+																			+						
Alysicarpus muelleri			+																																											
Cajanus cinereus																																														+
Crotalaria medicaginea var. *neglecta*		+	+												+																															
Cullen leucochaites						+																																								
Cullen pogonocarpum																																			+											
Glycine canescens			+								+																			+										+					
Gompholobium oreophilum																	+					+																								
Indigofera colutea			+																																											
Indigofera linifolia						+																																								
Indigofera monophylla						+	+																	+	+																+		+	+		
Indigofera rugosa															+																															
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301)	P3		+								+							+																												
Mirbelia viminalis																	+																													
Neptunia dimorphantha									+																																					
Petalostylis labicheoides											+											+	+							+											+				
Rhynchosia minima		+	+						+		+								+											+					+		+					+			
Senna artemisioides subsp. *helmsii*		+		+	+																			+	+												+						+		
Senna artemisioides subsp. *oligophylla*		+			+	+			+		+				+			+			+			+	+						+				+		+	+		+		+	+	+	
Senna artemisioides subsp. *oligophylla x helmsii*					+														+					+												+										
Senna glutinosa subsp. *glutinosa*		+		+		+	+	+				+	+			+	+		+			+	+	+			+		+			+	+	+		+		+		+			+	+	+	
Senna glutinosa subsp. *glutinosa x luerssenii*																																											+				
Senna glutinosa subsp. *pruinosa*		+				+	+	+						+	+	+		+																+				+						+		
Senna glutinosa subsp. x *luerssenii*		+		+	+				+	+						+	+	+		+	+	+		+								+					+	+		+			+		
Senna hamersleyensis x sp. Karijini(M.E. Trudgen 10392)									+																																					
Senna notabilis			+																											+																
Senna stricta		+		+																+																			+								
Senna symonii																									+						+															
Sesbania cannabina																																														+
Swainsona maccullochiana																																														+
Templetonia egena										+																					+															

SPECIES	Cons. Code	RL1301	RL1302	RL1303	RL1304	RL1305	RL1306	RL1307	RL1308	RL1309	RL1310	RL1311	RL1312	RL1313	RL1314	RL1315	RL1316	RL1317	RL1318	RL1319	RL1320	RL1321	RL1322	RL1323	RL1324	RL1325	RL1326	RL1327	RL1328	RL1329	RL1330	RL1331	RL1332	RL1333	RL1334	RL1335	RL1336	RL1337	RL1338	RL1339	RL1340	RL1341	RL1342	RL1343	RL1344	OPP
Tephrosia aff. *supina*																																										+			
Tephrosia rosea var. Fortescue Creeks (M.I.H. Brooker 2186)			+																																											
Tephrosia sp. clay soils (S. van Leeuwen et al. PBS 0273)									+																																					
Tephrosia sp. Fortescue (A.A. Mitchell 606)																																														+
**Vachellia farnesiana*											+																														+					
Vigna lanceolata											+																																			
Frankeniaceae																																														
Frankenia ? ambita										+									+																											
Goodeniaceae																																														
Dampiera candicans																																														+
Goodenia cusackiana														+																																
Goodenia forrestii		+	+																																										
Goodenia heterochila																								+						+															
Goodenia microptera						+													+				+			+																+	+	+		
Goodenia muelleriana		+					+	+	+		+								+			+		+			+			+												+			
Goodenia nuda	P4																													+												+			
Goodenia stellata																														+				+											
Goodenia stobbsiana							+					+	+	+			+					+	+					+									+			+			+		
Scaevola acacioides																																														+
Scaevola amblyanthera var. *centralis*											+																																			
Gyrostemonaceae																																														
Codonocarpus cotinifolius																																														
Lauraceae																																														
Cassytha capillaris								+		+	+							+		+		+					+													+				
Malvaceae																																														
Abutilon amplum			+																																											
Abutilon lepidum					+															+																								+			
Abutilon macrum																																			+											
Abutilon malvifolium																											+																			
Abutilon otocarpum			+																					+											+		+					+				
Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)											+																																			
Abutilon sp. Pilbara (W.R. Barker 2025)																									+																					
Androcalva luteiflora											+																			+											+				
Corchorus crozophorifolius											+																																			
Corchorus lasiocarpus															+		+			+		+	+		+															+					
Corchorus lasiocarpus subsp. *parvus*																													+																	
Corchorus sp.											+																																			

SPECIES	Cons. Code	RL1301	RL1302	RL1303	RL1304	RL1305	RL1306	RL1307	RL1308	RL1309	RL1310	RL1311	RL1312	RL1313	RL1314	RL1315	RL1316	RL1317	RL1318	RL1319	RL1320	RL1321	RL1322	RL1323	RL1324	RL1325	RL1326	RL1327	RL1328	RL1329	RL1330	RL1331	RL1332	RL1333	RL1334	RL1335	RL1336	RL1337	RL1338	RL1339	RL1340	RL1341	RL1342	RL1343	RL1344	OPP
Corchorus tectus					+	+	+																																			+		
Gossypium australe																			+																											
Gossypium australe (Burrup Peninsula form)			+		+											+								+						+					+							+	+		
Gossypium australe (Whim Creek form)		+				+	+																																						
Gossypium robinsonii			+								+													+						+										+		+		
Gossypium sturtianum var. *sturtianum*			+								+																			+										+		+		
Hibiscus burtonii																																				+				+					+	
Hibiscus coatesii					+		+		+									+									+		+															+	
Hibiscus sturtii var. *campylochlamys*									+									+	+	+				+	+		+																+	
Hibiscus sturtii var. *grandiflorus*		+							+																										+										
Hibiscus sturtii var. *platychlamys*																																											+		
Keraudrenia nephrosperma																									+																	+			
**Malvastrum americanum*			+						+		+																			+	+				+					+		+		
Melhania oblongifolia			+								+								+					+						+					+							+		
Sida arsiniata																				+		+		+																					
Sida echinocarpa		+			+	+																																					+		
Sida fibulifera			+								+													+				+			+				+				+		+			
Sida laevis																																							+						
Sida sp. Excedentifolia (J.L. Egan 1925)																																													+
Sida sp. Pilbara (A.A. Mitchell PRP 1543)																	+										+																+		
Sida sp. spiciform panicles (E. Leyland s.n. 14/8/90)			+		+			+	+		+													+						+	+				+					+		+	+		
Sida sp. verrucose glands (F.H. Mollemans 2423)			+						+											+															+							+			
Triumfetta clementii								+																																			+		
Waltheria indica			+								+																																		
Waltheria virgata																						+																								
Myrtaceae																																													
Calytrix carinata																																													+
Corymbia deserticola subsp. *deserticola*																																													+
Corymbia hamersleyana			+												+		+	+					+						+								+				+		+			
Eucalyptus camaldulensis subsp. *refulgens*											+																																		
Eucalyptus gamophylla																							+						+													+			
Eucalyptus leucophloia subsp. *leucophloia*							+	+				+	+	+		+	+	+			+	+		+	+	+	+			+		+	+	+	+	+	+		+	+		+	+		
Eucalyptus socialis subsp. *eucentrica*										+																																			+
Eucalyptus trivalva																																													+
Eucalyptus victrix			+								+																																		
Eucalyptus xerothermica																			+					+						+	+				+							+			
Melaleuca eleuterostachya										+									+																		+								

SPECIES	Cons. Code	RL1301	RL1302	RL1303	RL1304	RL1305	RL1306	RL1307	RL1308	RL1309	RL1310	RL1311	RL1312	RL1313	RL1314	RL1315	RL1316	RL1317	RL1318	RL1319	RL1320	RL1321	RL1322	RL1323	RL1324	RL1325	RL1326	RL1327	RL1328	RL1329	RL1330	RL1331	RL1332	RL1333	RL1334	RL1335	RL1336	RL1337	RL1338	RL1339	RL1340	RL1341	RL1342	RL1343	RL1344	OPP
Melaleuca glomerata											+																																		
Nyctaginaceae																																													
Boerhavia coccinea			+			+			+		+				+					+				+																+	+		
Oleaceae																																												
Jasminum didymum subsp. *lineare*								+		+														+					+	+					+			+		+			
Papaveraceae																																													
**Argemone ochroleuca* subsp. *ochroleuca*																																													+
Phyllanthaceae																																													
Notoleptopus decaisnei var. *orbicularis* (A.B. Craig 428)			+								+													+					+														
Phyllanthus erwinii																																		+								+			
Phyllanthus exilis																																								+					
Phyllanthus maderaspatensis			+						+		+																		+															
Plantaginaceae																																													
Stemodia grossa			+																								+													+					
Poaceae																																													
Amphipogon sericeus												+					+					+				+							+											
Aristida contorta		+		+	+												+																+						+			+		
Aristida holathera var. *holathera*								+									+						+										+			+					+			
Aristida inaequiglumis											+																		+															
Astrebla sp.																												+																	
Bothriochloa ewartiana											+								+																									
Brachyachne convergens									+																		+												+					
Brachyachne prostrata																															+						+								
**Cenchrus ciliaris*			+																																										
Chrysopogon fallax									+										+					+					+	+				+						+			
Cymbopogon ambiguus			+		+		+	+									+										+		+								+							
Cymbopogon procerus											+																		+															
Cymbopogon sp.																																												+	
Dichanthium fecundum			+																										+	+					+									
Dichanthium sericeum subsp. *humilius*		+							+										+										+						+				+				
Digitaria brownii																	+			+																						+			
Digitaria ctenantha			+																																										
Enneapogon caerulescens		+		+	+	+									+				+																			+				+		
Enneapogon lindleyanus			+								+																																		
Enneapogon polyphyllus			+		+			+	+						+		+	+		+																				+					
Enneapogon robustissimus			+																																										
Enteropogon ramosus			+								+																																		
Eragrostis cumingii			+								+																		+						+						+			
Eragrostis desertorum																																											+		
Eragrostis tenellula																													+											+				

SPECIES	Cons. Code	RL1301	RL1302	RL1303	RL1304	RL1305	RL1306	RL1307	RL1308	RL1309	RL1310	RL1311	RL1312	RL1313	RL1314	RL1315	RL1316	RL1317	RL1318	RL1319	RL1320	RL1321	RL1322	RL1323	RL1324	RL1325	RL1326	RL1327	RL1328	RL1329	RL1330	RL1331	RL1332	RL1333	RL1334	RL1335	RL1336	RL1337	RL1338	RL1339	RL1340	RL1341	RL1342	RL1343	RL1344	OPP
Eragrostis xerophila									+																		+																		
Eriachne aristidea					+	+		+																								+										+			
Eriachne mucronata							+	+				+	+	+		+	+					+														+								
Eriachne pulchella subsp. *dominii*		+		+		+	+									+	+														+					+			+			+		
Eriachne tenuiculmis			+																																										
Eulalia aurea			+		+						+						+							+	+					+	+				+				+	+	+		
Iseilema sp.		+			+	+	+																																					
Mnesithea formosa									+																																				
Panicum decompositum																																			+										
Panicum effusum																													+	+										+					
Paraneurachne muelleri			+				+				+						+		+			+		+	+																+		
Paspalidium clementii											+				+																													
Perotis rara			+																										+						+									
Schizachyrium fragile		+	+		+	+									+		+								+							+	+			+					+			
Setaria dielsii			+																										+															
Setaria surgens																													+															
**Setaria verticillata*											+																																	
Sporobolus australasicus		+	+	+	+	+			+	+	+				+	+			+	+	+			+				+			+			+	+		+			+	+		
Themeda triandra			+					+			+								+										+	+					+						+	+		
Triodia aff. melvillei														+																															
Triodia epactia		+	+	+	+	+		+	+		+	+	+	+		+	+			+					+						+	+			+					+	+		+		
Triodia longiceps									+	+						+			+	+	+						+	+			+			+				+			+			+
Triodia wiseana		+			+	+	+	+	+					+	+	+	+	+	+	+	+	+			+	+	+		+			+	+	+			+			+	+	+		
Tripogon loliiformis				+																												+		+											
Portulacaceae																																													
**Portulaca oleracea*			+			+			+																																			
Portulaca pilosa									+																																				
Proteaceae																																													
Grevillea berryana																																									+				
Grevillea pyramidalis subsp. *leucadendron*																																													+
Grevillea wickhamii subsp. *hispidula*																													+															
Hakea chordophylla								+				+	+				+	+					+				+									+		+				+		+	
Hakea lorea subsp. *lorea*						+	+							+										+					+											+			+		
Pteridaceae																																													
Cheilanthes sieberi subsp. *sieberi*									+		+									+							+			+	+				+					+	+			+	
Rubiaceae																																													
Oldenlandia crouchiana					+			+						+	+																												+		
Oldenlandia sp. Hamersley Station (A.A. Mitchell PRP 1479)	P3																											+																		
Psydrax suaveolens																																				+									+	

SPECIES	Cons. Code	RL1301	RL1302	RL1303	RL1304	RL1305	RL1306	RL1307	RL1308	RL1309	RL1310	RL1311	RL1312	RL1313	RL1314	RL1315	RL1316	RL1317	RL1318	RL1319	RL1320	RL1321	RL1322	RL1323	RL1324	RL1325	RL1326	RL1327	RL1328	RL1329	RL1330	RL1331	RL1332	RL1333	RL1334	RL1335	RL1336	RL1337	RL1338	RL1339	RL1340	RL1341	RL1342	RL1343	RL1344	OPP
Spermacoce brachystema																													+	+				+						+					
Synaptantha tillaeacea var. *tillaeacea*																																										+			
Santalaceae																																													
Anthobolus leptomerioides																																				+								+	
Santalum lanceolatum			+																																									
Sapindaceae																																													
Dodonaea coriacea																	+																												
Dodonaea lanceolata var. *lanceolata*			+								+																		+													+			
Dodonaea pachyneura																																													+
Scrophulariaceae																																													
Eremophila cuneifolia		+		+	+															+	+										+					+				+			
Eremophila forrestii subsp. *forrestii*				+					+											+																			+					
Eremophila fraseri subsp. *fraseri*					+																																								
Eremophila latrobei subsp. *filiformis*																																				+									
Eremophila longifolia																				+				+							+				+									
Eremophila maculata subsp. *brevifolia*																					+							+											+					
Solanaceae																																													
**Datura leichhardtii*																																													+
Nicotiana benthamiana																																													+
Solanum diversiflorum			+			+		+																					+																
Solanum elatius																			+					+																			+			
Solanum ferocissimum																													+						+										
Solanum horridum							+	+	+								+						+																				+		
Solanum lasiophyllum		+			+	+											+																				+								
Surianaceae																																													
Stylobasium spathulatum			+								+								+		+			+					+	+										+		+			
Violaceae																																													
Hybanthus aurantiacus			+								+																											+		+			+		
Zygophyllaceae																																													
Tribulus hirsutus																																											+		
Tribulus occidentalis			+																																									
Tribulus suberosus		+			+	+																																					+		

APPENDIX SEVEN: THREATENED AND PRIORITY FLORA REPORT FORMS

Department of Environment and Conservation
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Threatened and Priority Flora Report Form

Version 1.1 February 2012

Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DEC website at http://www.dec.wa.gov.au/content/view/5388/2237/

TAXON: *Goodenia nuda* **TPFL Pop. No:**

OBSERVATION DATE: 19/06/2013 **CONSERVATION STATUS:** P4 New population ☒

OBSERVER/S: Stephen Kern/Andrew Fry **PHONE:** 9430 8955

ROLE: Senior Botanist/Graduate Botanist **ORGANISATION:** Ecoscape

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Fortescue Metal Groups's Western Hub Rail Link area (on Rio Tinto tenement) in the western Hamersley Range, approximately 53 km northwest of Tom Price

Reserve No:

DEC DISTRICT: Pilbara **LGA:** Ashburton Land manager present: ☐

DATUM:
GDA94 / MGA94 ☒
AGD84 / AMG84 ☐
WGS84 ☐
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☐

Lat / Northing: 7527387

Long / Easting: 542284

ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐

No. satellites: _____ Map used: _____

Boundary polygon captured: ☐ Map scale: _____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Exploration lease

AREA ASSESSMENT: Edge survey ☐ Partial survey ☒ Full survey ☐ Area observed (m²): _____

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

POP'N COUNT ACCURACY: Actual ☒ Extrapolation ☐ Estimate ☐ Count method: _____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive	1			1
Dead				

Area of pop (m²): _____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. y Size 50 m x 50 m Data attached ☐ Total area of quadrats (m²): 2500

Summary Quad. Totals:				
Alive	1			1

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☐
Immature fruit ☐ Fruit ☒ Dehisced fruit ☐ Percentage in flower: _____ %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Clearing for infrastructure	N	L	M
• Grazing	L	L	S
•			

Please return completed form to **Species And Communities Branch** DEC,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

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Threatened and Priority Flora Report Form

Version 1.1 February 2012

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TAXON: *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) **TPFL Pop. No:**

OBSERVATION DATE: 18/06/2013 **CONSERVATION STATUS:** P3 New population ☒

OBSERVER/S: Stephen Kern/Andrew Fry **PHONE:** 9430 8955

ROLE: Senior Botanist/Graduate Botanist **ORGANISATION:** Ecoscape

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Fortescue Metal Groups's Western Hub Rail Link area (on Rio Tinto tenement) in the western Hamersley Range, approximately 55 km northwest of Tom Price

Reserve No:

DEC DISTRICT: Pilbara **LGA:** Ashburton Land manager present: ☐

DATUM:
GDA94 / MGA94 ☒
AGD84 / AMG84 ☐
WGS84 ☐
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☐

Lat / Northing: 7525768

Long / Easting: 527955

ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐

No. satellites: _____ Map used: _____

Boundary polygon captured: ☐ Map scale: _____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Exploration lease

AREA ASSESSMENT: Edge survey ☐ Partial survey ☒ Full survey ☐ Area observed (m²): _____

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☒ Count method: _____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive	200+			200+
Dead				

Area of pop (m²): _____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:	No.	Size	Data attached ☐	Total area of quadrats (m²):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☒ Flower ☐
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: _____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Clearing for infrastructure	N	L	M
• Grazing	L	L	S
•			

Please return completed form to **Species And Communities Branch** DEC,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

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Threatened and Priority Flora Report Form

Version 1.1 February 2012

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☐
Open depression ☐
Drainage line ☒
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☒
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☒
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☒
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☒
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. +U^*Eucalyptus victrix*,^*Eucalyptus camaldulensis* subsp. *refulgens*\^tree\7\c
2. M^^*Acacia citrinoviridis*,*Acacia coriacea* subsp. *pendens*,*Gossypium robinsonii*\^shrub\4\c
3. G^^*Eulalia aurea*,*Triodia epactia*,*Themeda triandra*\^tussock grass,hummock grass\2\c
4.

ASSOCIATED SPECIES:
Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☐ Very good ☒ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☒ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☒ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Also recorded at 7518855 mN 515659 mE in +U^*Eucalyptus victrix*\^tree\7\i;M^^*Acacia citrinoviridis*,*Acacia pyrifolia* var. *pyrifolia*,*Gossypium robinsonii*\^shrub\4\i;G^^*Enteropogon ramosus*,*Tephrosia rosea* var. Fortescue Creeks (M.I.H. Brooker 2186),*Themeda triandra*\^tussock grass,shrub\2\i

Also recorded at 7527166 mN 532236 mE in U^*Eucalyptus leucophloia* subsp. *leucophloia*,^*Corymbia hamersleyana*\^tree\6\bi;+M^*Acacia exilis*,^*Acacia bivenosa*\^shrub\3\i;G^*Triodia wiseana*\^hummock grass\2\c on basalt soil (20+ plants)

Also recorded at 7527402 mN 532360 mE in +U^*Eucalyptus leucophloia* subsp. *leucophloia*\^tree\6\r;M^*Acacia exilis*\^shrub\3\r;G^*Triodia wiseana*\^hummock grass\2\c on basalt soil (20+ plants)

Also recorded at 7527165 mN 531452 mE (20+ plants)

Also recorded at 7522619 mN 517986 mE (50+ plants)

Also recorded at 7518954 mN 515628 mE (20+ plants)

No specimens submitted due to the taxon being well collected.

DRF PERMIT/ LICENCE No: SL010338/SL010337 Note if only observing plants (i.e. no specimens or plant matieral is taken) then no permit/licence is required. For further information on permit and licening requirements see the Threatened Flora and Wildlife Licensing pages on DEC's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: Not collected_____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: Stephen Kern Role: Senior Botanist Signed: _____ Date: 26/08/2013

Please return completed form to **Species And Communities Branch** DEC,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

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Version 1.1 February 2012

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☐
Open depression ☒
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☒
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☒
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☐
Loam ☐
Clay loam ☒
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☒
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☐ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. +U^^*Eucalyptus xerothermica*,*Acacia citrinoviridis*,*Acacia aptaneura*\^tree\6\r
2. ;M^*Eremophila longifolia*,^*Acacia ancistrocarpa*\^shrub\4\r
3. G^^*Themeda triandra*,*Chrysopogon fallax*,*Eulalia aurea*\^tussock grass\2\d
4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☒ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☒ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Also recorded at 7525428 mN 523642 mE (one plant) 24/06/2013 on alluvial fan in +U^^*Eucalyptus leucophloia* subsp.

leucophloia,*Eucalyptus xerothermica*,*Corymbia hamersleyana*\^tree\6\r;M^^*Acacia bivenosa*,*Acacia monticola*,*Acacia*

cowleana\^shrub\4\c;G^^*Triodia epactia*,*Chrysopogon fallax*,*Eulalia aurea*\^hummock grass,tussock grass\2\i

Also recorded at 7527061 mN 543176 mE (one plant)

No specimens submitted due to poor material.

DRF PERMIT/ LICENCE No: SL010338/SL010337 Note if only observing plants (i.e. no specimens or plant matieral is taken) then no permit/licence is required. For further information on permit and licening requirements see the Threatened Flora and Wildlife Licensing pages on DEC's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: Not submitted_____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: Stephen Kern Role: Senior Botanist Signed: _____ Date: 26/08/2013

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Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

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TAXON: *Oldenlandia* sp. Hamersley Station (A.A. Mitchell PRP 1479) **TPFL Pop. No:**

OBSERVATION DATE: 23/06/2013 **CONSERVATION STATUS:** P3 New population ☒

OBSERVER/S: Stephen Kern/Andrew Fry **PHONE:** 9430 8955

ROLE: Senior Botanist/Graduate Botanist **ORGANISATION:** Ecoscape

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Fortescue Metal Groups's Western Hub Rail Link area (on Rio Tinto tenement) in the western Hamersley Range, approximately 53 km northwest of Tom Price

Reserve No:

DEC DISTRICT: Pilbara **LGA:** Ashburton Land manager present: ☐

DATUM:
GDA94 / MGA94 ☒
AGD84 / AMG84 ☐
WGS84 ☐
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☐

Lat / Northing: 7527740

Long / Easting: 537102

ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐

No. satellites: _____ Map used: _____

Boundary polygon captured: ☐ Map scale: _____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Exploration lease

AREA ASSESSMENT: Edge survey ☐ Partial survey ☒ Full survey ☐ Area observed (m²): _____

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

POP'N COUNT ACCURACY: Actual ☒ Extrapolation ☐ Estimate ☐ Count method: _____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				
Dead	500+			500+

Area of pop (m²): _____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:	No.	Size	Data attached ☐	Total area of quadrats (m²):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☐
Immature fruit ☐ Fruit ☐ Dehisced fruit ☒ Percentage in flower: _____ %

CONDITION OF PLANTS: Healthy ☐ Moderate ☐ Poor ☐ Senescent ☒

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Clearing for infrastructure	N	L	M
• Grazing	L	L	S
•			

Please return completed form to **Species And Communities Branch** DEC,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Flora Administrative Officer,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

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Threatened and Priority Flora Report Form

Version 1.1 February 2012

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☐
Open depression ☒
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other:
Basalt/calcrete rock type

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☒
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☐
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other:
Cracking clay soil

SOIL COLOUR:
Red ☒
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other:

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element:
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. +G^^*Eremophila maculata* subsp*. brevifolia*,*Sida fibulifera*,*Eragrostis xerophila*\^shrub,tussock grass\1\c
2.
3.
4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☒ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☒ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

No specimens submitted due to the poor quality of the collection (desiccated plant fragments).

DRF PERMIT/ LICENCE No: SL010338/SL010337 Note if only observing plants (i.e. no specimens or plant matieral is taken) then no permit/licence is required. For further information on permit and licening requirements see the Threatened Flora and Wildlife Licensing pages on DEC's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: Not collected_____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: Stephen Kern Role: Senior Botanist Signed: _____ Date: 26/08/2013

Please return completed form to **Species And Communities Branch** DEC,
Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

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Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

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Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DEC website at http://www.dec.wa.gov.au/content/view/5388/2237/

TAXON: *Ptilotus subspinescens* **TPFL Pop. No:**

OBSERVATION DATE: 18/06/2013 **CONSERVATION STATUS:** P3 New population ☒

OBSERVER/S: Stephen Kern/Andrew Fry **PHONE:** 9430 8955

ROLE: Senior Botanist/Graduate Botanist **ORGANISATION:** Ecoscape

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Fortescue Metal Groups's Western Hub Rail Link area (on Rio Tinto tenement) in the western Hamersley Range, approximately 53 km northwest of Tom Price

Reserve No:

DEC DISTRICT: Pilbara **LGA:** Ashburton Land manager present: ☐

DATUM:
GDA94 / MGA94 ☒
AGD84 / AMG84 ☐
WGS84 ☐
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☐

Lat / Northing: 7524845

Long / Easting: 527879

ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐

No. satellites: _____ Map used: _____

Boundary polygon captured: ☐ Map scale: _____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Exploration lease

AREA ASSESSMENT: Edge survey ☐ Partial survey ☒ Full survey ☐ Area observed (m²): _____

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☒ Count method: _____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive	10+			10+
Dead				

Area of pop (m²): _____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT:	No.	Size	Data attached ☐	Total area of quadrats (m²):
Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☐
Immature fruit ☐ Fruit ☐ Dehisced fruit ☒ Percentage in flower: _____%

CONDITION OF PLANTS: Healthy ☐ Moderate ☐ Poor ☐ Senescent ☒

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Clearing for infrastructure	N	L	M
• Grazing	L	L	S
•			

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HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☐
Open depression ☒
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☒
Specify other: Quartz/calcrete rock type

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☐
Loam ☒
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. U^*Eucalyptus socalis* subsp. *eucentrica*\^mallee shrub\6\bi
2. M^*Melaleuca eleuterostachya*\^shrub\3\i
3. +G^*Triodia longiceps*\^hummock grass\2\c
4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☒ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☒ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.)

Also recorded at 7527234 mN 534771 mE (10+ plants) in +M^^*Melaleuca eleuterostachya*,*Acacia bivenosa*,*Stylidium spathulatum*\^shrub\3\r;G^*Triodia wiseana*,^*Triodia longiceps*\^hummock grass\2\c

Also recorded at:

528268	7525860	20+ plants
535146	7527629	50+ plants
534495	7527113	60+ plants
532957	7527726	20+ plants
534204	7528020	10+ plants
535376	7527733	50+ plants
536804	7528465	30+ plants
521756	7525480	10+ plants
521798	7526199	50+ plants

No specimen submitted due to the species having sufficient collections from the vicinity.

DRF PERMIT/ LICENCE No: SL010338/SL010337 Note if only observing plants (i.e. no specimens or plant matieral is taken) then no permit/licence is required. For further information on permit and licening requirements see the Threatened Flora and Wildlife Licensing pages on DEC's website. Any actions carried out under licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: Not collected_____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: Stephen Kern Role: Senior Botanist Signed: _____ Date: 26/08/2013

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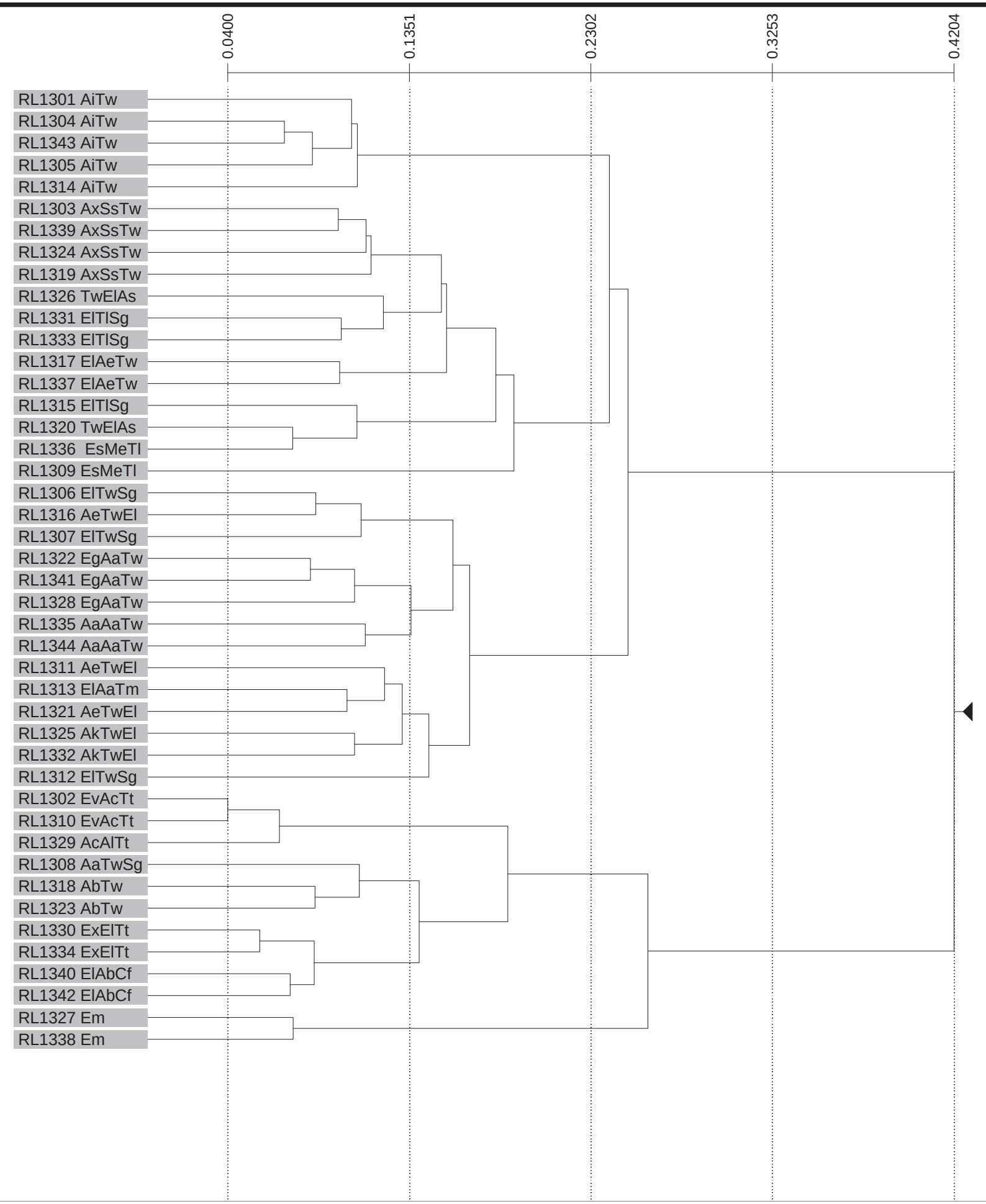
APPENDIX EIGHT: FLORISTIC ANALYSIS DENDROGRAM

Fusion Type: Flexible UPGMA Beta = -0.10
On Association: Two-Step (Columns) Created on: 10:05:20, August 09, 2013

Column Fusion Dendrogram



APPENDIX NINE: CONSERVATION SIGNIFICANCE ASSESSMENTS

Table 41: Conservation significant flora likelihood assessment

Table 41 also includes species identified during nearby Ecoscape surveys of the Western Hub and Central Pilbara areas but not identified by the database search. '^' refers to an Ecoscape record not included on *NatureMap*.

SPECIES	CONS CODE	SOIL	LANDFORM	VEGETATION	SOIL TYPE PRESENT	LANDFORM PRESENT	ASSOCIATED VEGETATION PRESENT	KNOWN FROM NEARBY	LIKELIHOOD OF OCCURRING IN WH RAIL LINK
Lepidium catapycnon	T	Skeletal soils	Hillsides	*Eucalyptus leucophloia*, *Triodia* spp.	N	N	Y	Y	Possible
Thryptomene wittweri	T	Skeletal red stony soils	Breakaways, stony creek beds	*Eucalyptus kingsmillii*	N	N	N	N	None (Rare)
Brachyscome sp. Wanna Munna Flats (S. van Leeuwen 4662)	P1	Clay, clay loam	Valleys, sumps	Mulga, *Acacia* spp.	Y	Y	Y	Y	Possible
Bothriochloa decipiens var. *cloncurrensis*	P1	Clay, loam	Damp depression; clay plain	Mulga, *Eucalyptus camaldulensis*	Y	Y	Y	Y	Possible
Calotis squamigera	P1	Pebbly loam	Plain	Mulga, *Acacia xiphophylla*	Y	Y	Y	N	Unlikely
Eragrostis sp. Mt Robinson (S. van Leeuwen 4109)	P1	Red-brown skeletal soils, ironstone	Steep slopes, summits	*Eucalyptus kingsmillii*	N	N	N	N	None (Rare)
Eremophila sp. West Angelas (S. van Leeuwen 4068)	P1	Banded ironstone	High hills, summits	*Eucalyptus kingsmillii*, Mulga	N	N	N	N	None (Rare)
Eremophila sp. Snowy Mountain (S. van. Leeuwen 3737)	P1	Ironstone	High hills, summits	*Eucalyptus leucophloia*	N	N	Y	N	Unlikely
Eremophila spongiocarpa	P1	Weakly saline alluvium	Alluvial plain on margins of marsh	Samphire	N	N	N	N	None (Rare)
Eucalyptus lucens	P1	Ironstone rocks	Rocky slopes and mountain tops, high in the landscape	*Eucalyptus kingsmillii*	N	N	N	N	None (Rare)

SPECIES	CONS CODE	SOIL	LANDFORM	VEGETATION	SOIL TYPE PRESENT	LANDFORM PRESENT	ASSOCIATED VEGETATION PRESENT	KNOWN FROM NEARBY	LIKELIHOOD OF OCCURRING IN WH RAIL LINK
Helichrysum oligochaetum	P1	Red clay, alluvium	Drainage lines	*Eucalyptus camaldulensis, E. victrix*	Y	Y	Y	Y	Possible
Josephinia sp. Marandoo (M.E. Trudgen 1554)	P1	Alluvial plain	Drainage lines	Mulga, *Acacia* spp.	Y	Y	Y	Y	Possible
Lepidium amelum	P1	Calcrete plains	Near creeklines	*Triodia wiseana*, Mulga, *Eucalyptus leucophloia*	N	Y	Y	Y	Possible
Sida sp. Hamersley Range (K. Newbey 10692)	P1	Skeletal soil; ironstone	Hilltops, cliffs, scree	*Eucalyptus leucophloia*, *Eucalyptus gamophylla*	Y	N	Y	Y	Possible
Tetratheca fordiana ms	P1	Shale pocket amongst ironstone	Midslope	*Eucalyptus kingsmillii*	N	Y	N	N	Unlikely
Teucrium pilbaranum	P1	Clay	Crab hole plain in a river floodplain, margin of calcrete table	*Eucalyptus camaldulensis, Eucalyptus victrix, Chrysopogon fallax*	Y	Y	Y	Y	Possible
Vittadinia sp. Coondewanna Flats (S. van Leeuwen 4684)	P1	Clay loam soils	Plain	Mulga	Y	Y	Y	N	Unlikely
Adiantum capillus-veneris	P2	Rocky	Moist, sheltered sites in gorges and on cliff walls	Unknown	Y	N	Unknown	N	Unlikely
Cladium procerum	P2	Loam, gravel	Perennial pools	Unknown	Y	N	Unknown	N	Unlikely
Eremophila forrestii subsp. Pingandy (M.E. Trudgen 2662)	P2	Stony soil	Slopes, low in landscape	Mulga	Y	Y	Y	N	Unlikely
Gompholobium karijini	P2	Ironstone	Hillslopes	*Eucalyptus leucophloia, Triodia wiseana*	Y	Y	Y	Y	Possible
Goodenia hartiana	P2	Sand	Plain	*Acacia basedowii*	N	Y	N	N	Unlikely
Oxalis sp. Pilbara (M.E. Trudgen 12725)	P2	Red-brown pebbly/rocky loam amongst boulders	Gullies	*Acacia* spp., *Eucalyptus leucophloia*	Y	N	Y	Y^	Possible

SPECIES	CONS CODE	SOIL	LANDFORM	VEGETATION	SOIL TYPE PRESENT	LANDFORM PRESENT	ASSOCIATED VEGETATION PRESENT	KNOWN FROM NEARBY	LIKELIHOOD OF OCCURRING IN WH RAIL LINK
Paspalidium retiglume	P2	Clay; cracking	Plain	Grassland/herbland	N	N	N	N	None (Rare)
Pentalepis trichodesmoides subsp. *hispida*	P2	Basalt	Hills	*Triodia* hummock grassland, often in the understorey of a shrubland of *Acacia* spp., *Gossypium* spp., *Senna* spp., *Brachychiton* spp. and *Eucalyptus* spp.	Y	Y	Y	Y^	Possible
Pilbara trudgenii	P2	Skeletal, red stony soil over ironstone	Hill summits, steep slopes, screes, cliff faces	*Eucalyptus kingsmillii*	N	N	N	N	None (Rare)
Scaevola sp. Hamersley Range basalts (S. van Leeuwen 3675)	P2	Skeletal, brown gritty soil over basalt	Summits of hills, steep hills	*Eucalyptus kingsmillii*	Y	N	N	Y	Unlikely
Spartothamnella puberula	P2	Rocky loam, sandy or skeletal soils, clay	Gorge, gully	*Acacia* spp.	Y	N	N	Y	Possible
Vigna sp. central (M.E. Trudgen 1626)	P2	Sandy plain; sand over compacted hardpan and limestone rock; claypan of fine cracking clays	Plain, claypan (valleys in CPP)	*Triodia epactia*, Mulga, *Eucalyptus camaldulensis*	Y	Y	Y	Y	Possible
Acacia daweana	P3	Stony red loamy soils	Low rocky rises, along drainage lines	*Acacia* spp., *Eucalyptus* spp.	Y	Y	Y	Y	Possible
Acacia subtiliformis	P3	Rocky calcrete plateau	Plateau	*Triodia* spp.	N	N	Y	N	Unlikely
Astrebla lappacea	P3	Clay loam	Alluvial plain, cracking clay plain	*Astrebla* spp., Mulga	Y	Y	Y	Y	Possible
Calotis latiuscula	P3	Sand, loam	Plain	Mulga	Y	Y	Y	Y	Possible
Dampiera anonyma	P3	Skeletal red-brown to brown gravelly soil over banded ironstone, basalt, shale and jaspilite	Hill summits, upper slopes	*Eucalyptus kingsmillii, Acacia hamersleyana*	N	N	N	Y	Unlikely

SPECIES	CONS CODE	SOIL	LANDFORM	VEGETATION	SOIL TYPE PRESENT	LANDFORM PRESENT	ASSOCIATED VEGETATION PRESENT	KNOWN FROM NEARBY	LIKELIHOOD OF OCCURRING IN WH RAIL LINK
Dampiera metallorum	P3	Skeletal red-brown gravely soils over banded ironstone	Steep slopes and summits	*Eucalyptus kingsmillii*	N	N	N	N	None (Rare)
Eragrostis crateriformis	P3	Clayey loam or clay	Creek banks, depressions	*Triodia epactia, Eucalyptus victrix*	Y	Y	Y	N	Unlikely
Eragrostis surreyana	P3	Red-brown clay	Drainage line	*Eucalyptus victrix, Eucalyptus camaldulensis, Cyperus vaginatus*	Y	Y	Y	Y	Possible
Eremophila forrestii subsp. *viridis*	P3	Unknown	Sandplain	Unknown	Unknown	N	Unknown	N	None (Rare)
Eremophila magnifica subsp. *velutina*	P3	Skeletal soils over ironstone	Summits	*Eucalyptus kingsmillii*	Y	N	N	Y	Possible
Fimbristylis sieberiana	P3	Mud, skeletal soil pockets	Pool edges, sandstone cliffs	*Cyperus vaginatus*	Y	Y	Y	Y	Possible
Geijera salicifolia	P3	Skeletal soils, stony soils	Massive rock scree, gorges	Mulga	Y	N	N	N	Unlikely
Glycine falcata	P3	Black clayey sand	Floodplains; depressions in crabhole plains on river	Grassland, *Eriachne* spp.	Y	Y	Y	Y	Possible
Goodenia sp. East Pilbara (A.A. Mitchell PRP 727)	P3	Clay, calcrete	Low hill, plains, creeklines	*Triodia wiseana, Corymbia hamersleyana, Eucalyptus xerothermica, E. victrix*	Y	Y	Y	Y	Possible
Gymnanthera cunninghamii	P3	Sand, calcrete, clay loam	Drainage line	*Eucalyptus camaldulensis, Eucalyptus victrix, Acacia citrinoviridis*	Y	Y	Y	Y	Possible
Indigofera sp. Bungaroo Creek (S. van Leeuwen 4301)	P3	Alluvium, skeletal ironstone	Creeks and gorges	Not given	Y	Y	Y	Y	Recorded
Indigofera sp. Gilesii (M.E. Trudgen 15869) (formerly *Indigofera gilesii* subsp. *gilesii*)	P3	Pebbly loam amongst boulders & outcrops	Hills	*Eucalyptus leucophloia, Corymbia hamersleyana, Corymbia ferriticola*	Y	Y	Y	N	Unlikely

SPECIES	CONS CODE	SOIL	LANDFORM	VEGETATION	SOIL TYPE PRESENT	LANDFORM PRESENT	ASSOCIATED VEGETATION PRESENT	KNOWN FROM NEARBY	LIKELIHOOD OF OCCURRING IN WH RAIL LINK
Iotasperma sessilifolium	P3	Cracking clay, black loam	Edges of waterholes, plains	Grassland, *Eriachne* spp., *Astrebla* spp., *Eucalyptus victrix*	Y	Y	Y	Y	Possible
Oldenlandia sp. Hamersley Station (A.A. Mitchell PRP 1479)	P3	Cracking clay, basalt	Gently undulating plain with large surface rocks, flat crabholed plain	*Astrebla* grassland, Mulga	Y	Y	Y	Y	Recorded
Olearia mucronata	P3	Schist	Schistose hills, along drainage channels	Mulga, grassland	N	N	Y	Y	Possible
Polycarpaea gracilis (formerly *Genus* sp. Hamersley Range hilltops (S van Leeuwen 4345), P1)	P3	Ironstone	Hills	*Eucalyptus leucophloia*, *E. gamophylla* over *Senna pruinosa, Acacia bivenosa, A. maitlandii*, *A. pyrifolia* over *A. marramamba, Triodia* sp.	Y	Y	Y	Y	Possible
Polymeria distigma	P3	Sand, clay	Plain	*Astrebla pectinata*	Y	Y	Y	Y	Possible
Ptilotus subspinescens	P3	Rocky	Gentle rocky slopes, screes and the bases of screes	Unknown	Y	Y	Unknown	Y	Recorded
Rhagodia sp. Hamersley (M. Trudgen 17794)	P3	Clay loam, sand loam, colluvium	Floodplain / lower slopes	Mulga, *Triodia* grassland	Y	Y	Y	Y	Possible
Rostellularia adscendens var. *latifolia*	P3	Ironstone soils, clay	Near creeks, rocky hills	Mulga, *Eucalyptus kingsmillii*	Y	Y	Y	Y	Possible
Sida sp. Barlee Range (S van Leeuwen 1642)	P3	Skeletal red soils pockets	Steep slope	*Ficus brachypoda, Corymbia ferriticola, Eucalyptus victrix, Eucalyptus kingsmillii*	Y	N	Y	Y	Possible
Swainsona thompsoniana (formerly *Swainsona* sp. Hamersley Station (A.A. Mitchell 196))	P3	Clay loam (cracking)	Flat crabholed plain	*Astrebla* grassland, Mulga	Y	Y	Y	Y	Possible

SPECIES	CONS CODE	SOIL	LANDFORM	VEGETATION	SOIL TYPE PRESENT	LANDFORM PRESENT	ASSOCIATED VEGETATION PRESENT	KNOWN FROM NEARBY	LIKELIHOOD OF OCCURRING IN WH RAIL LINK
Terminalia supranitifolia	P3	Basalt	Basalt rocks, gully	*Triodia wiseana, Eucalyptus leucophloia, Acacia pruinocarpa*	Y	Y	Y	Y^	Possible
Triodia sp. Mt. Ella (M.E. Trudgen 12739)	P3	Light orange-brown, pebbly loam. Amongst rocks & outcrops, gully slopes	Hilltops, gorges, gullies	*Eucalyptus leucophloia, Corymbia ferriticola*, Mulga	Y	N	Y	N	Unlikely
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367)	P3	Banded ironstone, Robe pisolite	Rocky hills and mesas	*Eucalyptus leucophloia, Acacia pruinocarpa, Acacia bivenosa, Acacia inaequilatera*	Y	Y	Y	Y	Possible
Whiteochloa capillipes	P3	Clay	Plain	*Astrebla* spp.	Y	Y	Y	Y	Possible
Acacia bromilowiana	P4	Red skeletal stony loam, orange-brown pebbly, gravel loam, laterite, banded ironstone, basalt	Rocky hills, breakaways, scree slopes, gorges, creek beds	*Eucalyptus leucophloia, Eucalyptus kingsmillii, Corymbia ferriticola, Acacia hamersleyensis*	Y	Y	Y	Y	Possible
Eremophila magnifica subsp. *magnifica*	P4	Skeletal soils over ironstone	Rocky screes	*Corymbia hamersleyana, Eucalyptus leucophloia, Eucalyptus kingsmillii*	Y	N	Y	Y	Possible
Livistona alfredii	P4	Stony loam, limestone	Edges of permanent pools	*Eucalyptus camaldulensis , Eucalyptus victrix, Corymbia opaca*	Y	N	Y	Y	Possible
Ptilotus mollis	P4	Rocky	Stony hills and screes	*Eucalyptus leucophloia*, Mulga, *Triodia* spp.	Y	Y	Y	Y	Possible
Rhynchosia bungarensis	P4	Pebbly, coarse sand	Banks of flow line	Various	Y	Y	Y	Y	Possible

SPECIES	CONS CODE	SOIL	LANDFORM	VEGETATION	SOIL TYPE PRESENT	LANDFORM PRESENT	ASSOCIATED VEGETATION PRESENT	KNOWN FROM NEARBY	LIKELIHOOD OF OCCURRING IN WH RAIL LINK
Not identified by DPaW database search as likely to occur in the survey area									
Hibiscus sp. Canga (P.J.H. Hurter & J. Naaykens 11013)	P1	Ironstone	Gorges	Unknown	Y	N	Unknown	Y^	Possible
Solanum kentrocaule	P3	Ironstone	Gorges, hill summits	*Eucalyptus leucophloia, E. gamophylla, E. kingsmillii, Triodia wiseana*	Y	N	Y	Y	Possible
Themeda sp. Hamersley Station (M.E. Trudgen 11431)	P3	Clay	Plain	Grassland	Y	Y	Y	Y	Possible
Goodenia nuda	P4	Alluvial soils, clay	Creeks, plains	Grasslands, *Eucalyptus victrix, Acacia/Triodia* spp.,	Y	Y	Y	Y	Recorded

Table 42: Conservation significant flora likelihood re-evaluation

SPECIES	RE-EVALUATED LIKELIHOOD	REASON
Acacia bromilowiana (P4)	Unlikely	The habitat of rocky is not present in the survey area.
Acacia daweana (P3)	Unlikely	It occurs on larger hills than those present in the survey area.
Astrebla lappacea (P3)	Possible	Plausible; the habitat may occur within the survey area. One unidentifiable *Astrebla* sp. was recorded from the survey area.
Brachyscome sp. Wanna Munna Flats (S. van Leeuwen 4662) (P1)	Possible	Plausible; the habitat (clay valleys) is present in the survey area, it is known from nearby and is an annual that may not have been present due to the poor seasonal conditions,
Bothriochloa decipiens var. *cloncurrensis* (P1)	Unlikely	The nearest record is an outlier population.
Calotis latiuscula (P3)	Unlikely	Occurs within large clay pan areas, only broadly similar in habitat to those present.
Eragrostis surreyana (P3)	Unlikely	Occurs within large clay pan areas, only broadly similar in habitat to those present.
Eremophila magnifica subsp. *magnifica* (P4)	Unlikely	Ecoscape has recorded this taxon nearby (Eliwana and Flying Fish, Delphine, Mt Farquhar) however the rocky habitat does not occur within the survey area.
Eremophila magnifica subsp. *velutina* (P3)	Unlikely	Ecoscape has recorded this taxon nearby (Eliwana and Flying Fish, Mt Farquhar) however the rocky habitat does not occur within the survey area.
Fimbristylis sieberiana (P3)	Unlikely	The habitat (pools) does not occur within the survey area.
Gompholobium karijini (P2)	Unlikely	Ecoscape has recorded this species from the Fortescue Firetail area and possibly from the nearby Mt Farquhar area (a single vegetative plant). The habitat in both areas is on large hills, none of which are within the survey area.
Glycine falcata (P3)	Unlikely	Occurs within large clay pan area, only broadly similar in habitat to those present.
Goodenia sp. East Pilbara (A.A. Mitchell PRP 727) (P3)	Unlikely	Some doubt on identification of nearby specimens; the only certain population is not from nearby.
Gymnanthera cunninghamii (P3)	Unlikely	The habitat of semi- and permanent watercourses are not within the survey area.
Helichrysum oligochaetum (P1)	Unlikely	Only one record from nearby.
Hibiscus sp. Canga (P.J.H. Hurter & J. Naaykens 11013) (P1)	Unlikely	This species has been recorded from the nearby Delphine tenement, however the habitat (gorges) do not occur within the survey area.
Iotasperma sessilifolium (P3)	Possible	Plausible; the habitat (clay plains) is present in the survey area.
Josephinia sp. Marandoo (M.E. Trudgen 1554) (P1)	Unlikely	It is over 40 km to the nearest record that defines the western edge of the population.
Lepidium amelum (P1)	Unlikely	The habitat of this species is calcrete plains; whilst calcrete is present it in clay plains, it is not the dominant portion of the soil.
Lepidium catapycnon (T)	Unlikely	The habitat of this species is on mid- to higher hills of the Hamersley Range; only low hills occur within the survey area thus it is unlikely to occur.

SPECIES	RE-EVALUATED LIKELIHOOD	REASON
Livistona alfredii (P4)	Unlikely	It is a large, distinctive species with a very specific habitat that is not present in the survey area.
Olearia mucronata (P3)	Unlikely	The soil and habitat (schistose hills) are not present in the survey area.
Oxalis sp. Pilbara (M.E. Trudgen 12725)	Unlikely	Ecoscape has found this species on the nearby Delphine tenement, within a gorge. The other known populations near Paraburdoo are also associated with gorges. Therefore, whilst known from nearby the habitat does not occur within the survey area.
Pentalepis trichodesmoides subsp. *hispida* (P2)	Possible	Plausible; this taxon has only recently been published and added to the conservation significant list. Ecoscape has recorded it from the nearby Eliwana and Flying Fish and Delphine tenements in landforms similar to those within the survey area (on basalt soils, where it occurred as scattered individuals).
Polycarpaea gracilis (P3)	Unlikely	Ecoscape has recently recorded this species from the nearby Mt Farquhar and Delphine areas. *Polycarpaea gracilis* has a very restricted distribution (to the west and northwest of the survey area) and is associated with larger hills that aren't present in the survey area.
Polymeria distigma (P3)	Unlikely	Few records in the Pilbara; Pilbara records correspond with *Astrebla* grasslands that aren't present in the survey area.
Ptilotus mollis (P4)	Unlikely	The rocky habitat does not occur within the survey area.
Rhagodia sp. Hamersley (M. Trudgen 17794) (P3)	Possible	Plausible; habitat is Mulga.
Rhynchosia bungarensis (P4)	Unlikely	This species is a common component of drainage lines nearby, however all major drainage lines were assessed and it wasn't present. It has not been recorded from the nearby Eliwana and Flying Fish tenements and its distribution on *NatureMap* indicates this portion of the Hamersley Range is not within its usual range.
Rostellularia adscendens var. *latifolia* (P3)	Possible	Plausible: habitat includes Mulga that occurs in the survey area.
Sida sp. Barlee Range (S van Leeuwen 1642) (P3)	Unlikely	The habitat of steep slopes does not occur within the survey area.
Sida sp. Hamersley Range (K. Newbey 10692) (P1)	Unlikely	Ecoscape has recorded this species from nearby, where it has been found mostly on south-facing slopes, frequently in gorges. This specific habitat does not occur within the survey area.
Solanum kentrocaule (P3)	Unlikely	The habitat of high hills is not present in the survey area.
Spartothamnella puberula (P2)	Unlikely	The habitat of gorges and gullies is not present in the survey area.
Swainsona thompsoniana (P3)	Possible	Known from clay areas nearby.
Terminalia supranitifolia (P3)	Unlikely	This species has been recorded from the nearby Delphine tenement, thus is known from nearby however the habitat of massive boulder mounds are not present in the survey area.
Teucrium pilbaranum (P1)	Unlikely	Largely known from calcrete habitat not present in survey area.
Themeda sp. Hamersley Station (M.E. Trudgen 11431) (P3)	Unlikely	Clay pans in the survey area were searched and this species not located.

SPECIES	RE-EVALUATED LIKELIHOOD	REASON
Triodia sp. Robe River (M.E. Trudgen et al. MET 12367) (P3)	Unlikely	This species has a restricted distribution (west of the survey area) and occurs on high hills. Likely mesa habitat was searched.
Vigna sp. central (M.E. Trudgen 1626) (P2)	Possible	Plausible; habitat may occur in the survey area.
Whiteochloa capillipes (P3)	Unlikely	The nearby record is an outlier from the species' usual range.

APPENDIX TEN: VEGETATION SIGNIFICANCE REVIEW

Table 43: Reports reviewed for vegetation significance and summary of findings relevant to the survey area

AUTHOR/YEAR REFERENCE	REPORT TITLE	SUMMARY OF REPORT FINDINGS OF RELEVANCE TO SURVEY AREA
Biota Environmental Sciences (2013)	*West Turner Syncline Phase 2 Vegetation and Flora Report*	22 308 ha survey area. Significant findings include: • 52 vegetation units, considered a typical number of units for the size of the survey area including types considered to represent 'Ecosystems at Risk' 'all major ephemeral water courses', 'valley floor Mulga' and 'lower slope Mulga' • Biota also considers creekline vegetation, even if not 'major', and gorge and gully vegetation to have conservation significance • 639 native vascular flora (considered above average) including two P1, eight P3, three P4. Creekline vegetation and valley floor Mulga vegetation also occur within the rail link survey area.
Ecoscape (2013a)	*Delphine Level 2 Flora and Vegetation Survey (Phase 2)*	The 52 770 ha survey area is in the western Hamersley Range. The survey identified: • 468 vascular flora taxa including two P1 taxa, three P2, seven P3 taxa, five P4 taxa, two potentially undescribed taxa and 16 introduced species • 29 vegetation types including one that may represent a subtype of the vulnerable *'Themeda* grasslands on cracking clays (Hamersley Station, Pilbara)' TEC, two that represent the 'Brockman Iron cracking clay communities of the Hamersley Range' PEC, one GDE and two potential GDEs and one sheet flow dependent Mulga vegetation. No vegetation similar to the significant vegetation types identified from Delphine was recorded in the Rail Link survey area.
Ecoscape (2013b)	*Eliwana and Flying Fish Level 2 Flora and Vegetation Survey (Phase 2)*	The 49 720 ha survey area is in the western Hamersley Range. The survey identified : • 429 vascular flora species including four P3axa, three P4 taxa, one potentially undescribed species and 12 introduced species • 25 vegetation types including one representing the '*Triodia* sp. Robe River assemblages of mesas of the West Pilbara' PEC, one GDE and four potential GDEs. No vegetation similar to the significant vegetation types identified from Eliwana and Flying Fish was recorded in the Rail Link survey area.
Environmental Protection Authority (2013)	*Turee Syncline Iron Ore Project. Report and recommendations of the Environmental Protection Authority. Report 1479*	Turee Syncline is east of Paraburdoo in Hamersley sub-region: • disturbance footprint of 1 050 ha • 11 vegetation communities; no TECs or PECs • all vegetation considered widespread • 563 flora taxa including 25 introduced species, no TF, eight PF including *Oxalis* sp. Pilbara • PF also occur outside clearing area. Only broad similarities with the rail link survey area.

AUTHOR/YEAR REFERENCE	REPORT TITLE	SUMMARY OF REPORT FINDINGS OF RELEVANCE TO SURVEY AREA
Astron Environmental Services (2012a)	*Hardey Rail Corridor and Borrow Pits Vegetation and Flora Survey (Phase 2)*	75 ha survey area is located in Gascoyne and Pilbara bioregions. Significant findings include: • 52 vegetation associations and 55 floristic groups identified; Astron considers the number of vegetation associations to be comparable with other rail projects in the Pilbara • vegetation included types considered to represent 'Ecosystems at Risk' 'all major ephemeral water courses', 'valley floor Mulga' and 'Mulga creekline community of the Ashburton Plains' occupying a combined 11.4% of the survey area • Mulga, *Melaleuca argentea, Eucalyptus camaldulensis* and *E. victrix* were identified as being susceptible to changes in hydrology • 413 vascular flora species • four PF species were confirmed (all P3 or P4) and one unconfirmed (sterile) possible P3 species • weed diversity increased with good seasonal conditions. Nearby vegetation was broadly similar to the rail link survey area.
Astron Environmental Services (2012b)	*Hardey Resource Area and Gas Pipeline Vegetation and Flora Survey (Phase 2)*	1 364 ha survey area. Significant findings include: • 24 vegetation associations • no TECs or PECs but vegetation included types considered to represent 'Ecosystems at Risk' 'all major ephemeral water courses', 'hill-top flora of the Hamersley Range', 'valley floor Mulga' and 'Mulga creekline community' occupying a combined 10% of the survey area • 295 vascular flora species, including one P3 • creekline species *Melaleuca glomerata, Eucalyptus camaldulensis* and *E. victrix* were considered of significance. Valley floor Mulga vegetation also occurred in the rail link survey area.
Ecologia Environment (2012)	*Brockman Resources Limited Rail Development Vegetation and Flora Survey*	7 900 ha survey area within the Fortescue and Chichester subregions. Significant findings include: • 549 flora taxa, including two P1, two P3, two P4 • 39 vegetation communities, with two considered to represent PECs (Fortescue Marsh and Fortescue Valley Sand Dunes), and gully vegetation considered of local conservation significance. The vegetation in the Fortescue subregion was broadly similar to the rail link survey area.
Ecoscape (2012a)	'Themeda *Grasslands on Cracking Clay' TEC Assessment*	No vegetation similar to the TEC occurs in the rail link survey area.
Ecoscape (2012b)	*Central Pilbara Project Level 2 Flora and Vegetation Assessment (draft)*	Vegetation considered analogous with a TEC and PEC and Sheet Flow Dependent Vegetation were recorded, however no similar vegetation occurs within the rail link survey area.
Ecoscape (2011)	*Pilbara Iron Ore Project – Blacksmith Flora and Vegetation Survey*	Five vegetation types were considered of local significance; vegetation similar to one of these (considered of significance due to small local extent); *Eucalyptus victrix* open woodland, also occurs in the survey area. It occurs over the greater Hamersley Range.
Fortescue Metals Group (2011b)	*Significant Flora, Vegetation, Fauna and Fauna Habitats of the Special Rail Licence*	This report summarized the findings of a number of biological surveys in the Pilbara. Mulga and *Acacia xiphophylla* vegetation types similar to that found in the survey area were considered to have high conservation significance.
Astron Environmental Services (2010)	*West Pilbara Iron Ore Project Reconciliation of Vegetation Descriptions and Associated Vegetation Mapping*	Vegetation types identified from a series of surveys were reconciled and given a conservation value risk rating. No highly significant vegetation identified by this process was similar to any within the rail link survey area.

AUTHOR/YEAR REFERENCE	REPORT TITLE	SUMMARY OF REPORT FINDINGS OF RELEVANCE TO SURVEY AREA
Biota Environmental Sciences (2010c)	*A Vegetation and Flora Survey of the Wheatstone Study Area, near Onslow*	Clay pan vegetation (dominated by *Sporobolus mitchellii, Eriachne benthamii, Eragrostis xerophila* and *Eulalia aurea* with areas of *Acacia xiphophylla* shrublands) is considered of moderate (local) significance. Similar vegetation did not occur within the rail link survey area.
Biota Environmental Sciences (2010a)	*A Vegetation and Flora Survey of Expansion Areas at Nammuldi*	*Eucalyptus xerothermica* vegetation of creeklines (considered similar to vegetation type **ExEltTt** in the rail link survey area) was considered to have moderate conservation significance.
Biota Environmental Sciences (2010b)	*A Vegetation and Flora Survey of Silvergrass West*	Vegetation considered to represent a TEC and PEC (both grasslands, neither of which are similar to rail link survey area vegetation types), and GDE vegetation that included *Eucalyptus camaldulensis* subsp. *refulgens* were considered of highest significance (similar to vegetation type **EvAcTt**), with other vegetation associated with cracking clay soils and gorges (no similar vegetation occurred in the rail link survey area) considered to have high or moderate conservation significance.
Coffey Environments (2010a)	*Flora and Vegetation Assessment, Solomon Project and Investigator*	Mulga vegetation was consider to have regional significance due to its vulnerability to changes in surface drainage. No similar Mulga vegetation was recorded from the rail link survey area.
Coffey Environments (2010b)	*Flora and Vegetation Assessment, Solomon Rail Project Volume 1*	No vegetation types were listed as having significance.
Ecoscape (2010)	*Level Two Flora and Vegetation Assessment, Firetail Mining Area*	The only vegetation considered of local significance occurring in the Firetail Mining Area that also occurs in the survey area was dominated by *Corymbia hamersleyana* and *Eucalyptus gamophylla* on valley floors. These were of restricted extent within the Firetail Mining Area but more widespread over the greater Hamersley Range. No similar vegetation was recorded from the rail link survey area.
ENV Australia (2010)	*Solomon Project: Kings Flora and Vegetation Assessment*	The only vegetation types identified as being significant due to their localised occurrence are not considered to be represented in the rail link survey area.
Ecologia Environment (2009)	*Brockman Resources Limited Marillana (E47/1408) Vegetation and Flora Report Version 5*	No vegetation similar to vegetation types were considered to have conservation significance.
GHD (2009)	*Turee Syncline Infrastructure Area Flora, Vegetation and Fauna Surveys*	All vegetation types were considered of 'least concern' in terms of significance.
Western Botanical (2009a)	*Flora and vegetation of the proposed Cape Preston Rail Corridor West Pilbara Iron Ore Project 2007-2008*	Riparian vegetation, Mulga vegetation, various vegetation types supporting PF species and *Acacia xiphophylla* vegetation were considered to have high conservation value due to small extent, vulnerability to impacts, supporting a rich ephemeral flora and supporting PF species. *Acacia xiphophylla* vegetation occupying 240 ha occurred in the rail link survey area.
Western Botanical (2009b)	*Flora and vegetation of the proposed mine and associated infrastructure areas West Pilbara Iron Ore Project*	*Acacia xiphophylla* vegetation types, *Acacia citrinoviridis* vegetation on mesas (now likely to be considered as a PEC), riparian vegetation and a range of vegetation types supporting PF species were considered to have high conservation value. *Acacia xiphophylla* and riparian vegetation occurred in the rail link survey area.
Astron Environmental Services (2008a)	*Nullagine Project Flora and Vegetation Survey*	Grasslands and herblands on cracking clay and Mulga woodlands were considered of local significance. No similar vegetation occurred within the rail link survey area.
Biota Environmental Sciences (2008)	*Marandoo Mine Phase 2 Project Vegetation and Flora Survey*	Mulga vegetation types and vegetation on calcrete (as well as other vegetation types not similar to the survey area) were considered to have conservation significance. Mulga vegetation occurs within the rail link survey area.
Ecologia Environment (2008)	*BHP Billiton Iron Ore Rapid Growth Project 5 (RGP5) Chichester Deviation Vegetation and Flora Report (Version 3)*	*Astrebla pectinata* tussock grassland and *Acacia xiphophylla* scrubland on cracking clays were considered to be of high local conservation significance; these weren't recorded from the rail link survey area.

AUTHOR/YEAR REFERENCE	REPORT TITLE	SUMMARY OF REPORT FINDINGS OF RELEVANCE TO SURVEY AREA
Mattiske Consulting (2008)	*Flora and Vegetation on the Hope Downs 4 Mine and Village/Camp Area*	Mulga and Mulga-Spinifex communities, calcrete (characterised by *Eucalyptus socialis*) and creekline communities are considered to have conservation significance as they support populations of PF. No similar vegetation significantly supported PF in the rail link survey area.
Biota Environmental Sciences (2007a)	*A Vegetation and Flora Survey of the Mesa K Mine Site, near Pannawonica*	All vegetation types were considered to be of at least moderate conservation significance.
Coffey Environments (2007)	*Targeted Flora Survey, Exploration Leases E47/1763, P47/1255 and P47/1256, Mt McLeod*	No vegetation similar to types found in the survey area were considered of significance.
Biota Environmental Sciences (2007b)	*A Vegetation and Flora Survey of the West Turner Section 10 Area and Infrastructure Corridor*	Riparian vegetation was considered of high conservation significance and gully and Mulga vegetation considered of moderate significance. Mulga and riparian vegetation occur in the survey area.
Biota Environmental Sciences (2005)	*Vegetation and Flora Survey of Mesa A and Mesa G, near Pannawonica*	All vegetation types were considered to be of at least moderate conservation significance.
Mattiske Consulting (2005)	*Flora and Vegetation on the Cloudbreak and White Knight Leases*	Mulga communities are considered to be of local significance due to having Priority Flora species and being on the northern edge of their extent. This combination of attributes did not occur within the rail link survey area.
Biota Environmental Sciences (2004a)	*Vegetation and Flora Survey of the Proposed FMG Stage A Rail Corridor*	Within the Hamersley biogeographic subregion, only Mulga groves were considered of high conservation significance; these did not occur in the survey area.
Biota Environmental Sciences (2004b)	*Vegetation and Flora Survey of the Proposed FMG Stage B Rail Corridor and Mines Areas*	Only Mulga vegetation was considered to have conservation significance; Mulga did occur in the rail link survey area.
Van Vreeswyk *et al.* (2004)	*'Vegetation' in Technical Bulletin 92 - An inventory and condition survey of the Pilbara region, Western Australia*	The only vegetation considered of significance is now listed as either TEC or PECs and does not occur within the survey area.
van Leeuwen & Bromilow (2002)	*Botanical Survey of Hamersley Range Uplands*	• the Hamersley Range is considered significant due to its geographical position • uplands, gorges and clay valley floors provide biodiversity refugia • the vegetation of the uplands was assessed as having strong geographic clustering of floristics (ie the floristics of nearby uplands were more similar than those of further away uplands) • there was no discussion of the significance of vegetation in this report
Trudgen & Casson (1998)	*Flora and Vegetation Surveys of Orebody A and Orebody B in the West Angelas Hill Area, an Area Surrounding Them, and of Rail Route Options Considered to Link Them to the Existing Robe River Iron Associates Rail Line*	A number of vegetation types identified from the survey area were considered to have conservation significance, including: • some riparian vegetation • vegetation associated with seeps • some grasslands on clay soils (including vegetation that is now considered a TEC and PEC) • some Mulga vegetation types.