Appendix A

Vegetation Assessment Data Sheets

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Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: FL01 Assessor: JB + CL Date: 29/08/2008

Location: Large Remnant – Gas Fields

GPS Projection: Lat-Long; (UTM) Datum: (GDA94); WGS84; AGD84 Zone: 56

Latitude / Easting: 403.614 Longitude / Northing: 644 9196 Waypoint #: 001

Photo: 2632 / 2633

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish	(Clayey)	Clay	
Pale	Silty	(Silt) /	
Yellow	Sandy	(Loam)	
Orange	Gravely	Sand	
(Brown)	Stony	Gravel	
Red			
(Dark)		Saline Mud	
Black			
Mottled			

Altitude: 145 m Slope: Gentle Aspect: N; NE; E; SE; S; SW; W; (NW)

Landform:

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
(PLAIN)		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	(A)	Slope or hill not specified	F
Downs, open downs, rolling downs, ashy downs, pebbly downs	*	Cliff (steep rocky faces), rocky ledge, rocky outcrop, scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees + permanent water	C	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— + intermittently wet	D	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds + intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		Freshwater lake, lagoon, spring, stream	X
		Freshwater swamp, marsh, soak, seepage area	W
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	(VG Very gently inclined)	GE Gently inclined	MO Moderately inclined	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	32–56	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class	**Erosional landform pattern**						
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	UL Undulating low hills	RL Rolling low hills	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently undulating rises	UR Undulating rises	RR Rolling rises	SR Steep rises	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	(GP Gently undulating plain)	UP Undulating plain	RP Rolling plain	B badlands	B Badlands	B Badlands

Disturbance

Fire scars: slight 2-3m height %10

Feral animal: – %

Weeds: Thistle (minor) <%5

Other: Logging <%5

Health: Pristine / Excellent / (Very Good) / Good / Average / Degraded / Completely Degraded (almost without natives)

Special significance

Cultural: –

Recreational: –

Conservation: Last large remnant in area

Commercial: –

Other Notes: Minimise impacts – fairly large intact remnant patch

Width of community: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; (not linear)
Width of total remnant: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; not linear (mapping)
Total community area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; >50ha
Total remnant area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; >50ha

50m X 10m Plot Information

Canopy Stratum Form: (Tree); Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent			<5%. Bare ground.
Canopy	15m	30%	
Mid	1.5m	30%	
Ground	0.5m	50%.	

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
E. propinqua	A	Tree		15m					
E. cimbra	A	Tree			12m				
E. siderophloia	O	Tree			12m				
Exocarpus cupressiformas	O	Tree				5m			
Ozothamnus diosmifolius (s)	D	Shrub					1.5m		
Acacia ulicifolia	F	shrub					1m		
Pultenea villosa (s) (photo 2634-6)	F	shrub					1m		
Entolasia stricta (s)	A								0.5
Pratia purpurascens (s)	F								0.1
Hardenbergia violacea	O								0.2
* Senecio madagascariensis (s)	R								0.3
* (Thistle) Cirsium vulgare	R								0.3
+ E. microcorys	R								
+ Bursaria shinosa	R								
+ Acacia falcata	R								
(*) KEITH - NSW 21 - NORTHERN HINTERLAND SEMI-MESIC FOREST									
(*) CRA - FE 134 - SOUTH COAST SHRUBBY GREY GUM									

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling;
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)

Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: FL02 Assessor: JB + CL Date: 29 / 08 /2008

Location: Large remnant – Gas Fields

GPS Projection: Lat-Long; (UTM) Datum: (GDA94); WGS84; AGD84 Zone: 56

Latitude / Easting: Longitude / Northing: Waypoint #: 002

Photo: 2637 / 2638

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish	(Clayey)	Clay	
Pale	Silty	Silt	
Yellow	Sandy	(Loam)	
Orange	Gravely	Sand	
(Brown)	Stony	Gravel	
Red			
Dark		Saline Mud	
Black			
Mottled			

Altitude: 133 m Slope: Aspect: N; NE; E; SE; (S); SW; W; NW

Landform: Undulating Plain

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
(PLAIN)		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	A	Slope or hill not specified	F
Downs, open downs, rolling downs, ashy downs, pebbly downs		Cliff (steep rocky faces), rocky ledge, rocky outcrop, scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees + permanent water	C	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— + intermittently wet	D	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds + intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		Freshwater lake, lagoon, spring, stream	X
		Freshwater swamp, marsh, soak, seepage area	W
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	VG Very gently inclined	GE Gently inclined	MO Moderately inclined	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	32–56	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class	**Erosional landform pattern**						
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	UL Undulating low hills	RL Rolling low hills	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently undulating rises	UR Undulating rises	RR Rolling rises	SR Steep rises	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	GP Gently undulating plain	(UP Undulating plain)	RP Rolling plain	B badlands	B Badlands	B Badlands

Disturbance

Fire scars: slight / old - 3m scar <%5

Feral animal: Hare / canid %

Weeds: ✓ <%5

Other: Track / excavator diggings 5m x 5m nearby / logging nearby %

Health: Pristine / Excellent / (Very Good) / Good / Average / Degraded / Completely Degraded (almost without natives)

Special significance

Cultural: —

Recreational: —

Conservation: Last large remnant in area

Commercial: —

Other Notes: Minimise impacts – fairly large intact remnant veg. patch

Width of community: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; (not linear)
Width of total remnant: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; not linear
Total community area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; >50ha
Total remnant area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; >50ha

50m X 10m Plot Information

Canopy Stratum Form: Tree; Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent			* Bare ground <5%
Canopy	16 m	30%	
Mid	1.5m	10%	
Ground	0.5m	50%	

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
E. moluccana	D	Tree		16m					
E. siderophloia	O	Tree		16m					
E. umbra	O	Tree		16m					
Exocarpus cupressaformis	F	Tree		6m					
Acacia ulifolcia	F	Shrub					1.5m		
Ozothamus diosmifolius	F	Shrub					1.5m		
Hardenbergia violacea	O	Vine							0.20
Bursaria spinosa	F	Shrub					1m		
Pratia purpurascens	O	Herb							0.10
* Centaury spp. (S)	O	Herb							0.2
Lomandra longifolia	O	Herb							0.5
Hibbertia aspera	F	Herb							0.5
Themeda triandra	A	grass							0.3
Poa sieberiana var. sieberiana (S)	F	grass							0.3
Imperata cylindrica (bloody grass)	F	grass							0.6
Jacksonia scoparia	R	Tree		5m					
* Senecio madagasariensis	O	Herb							0.2
* Hypochaeris radicata	O	Herb							0.1
+ Clematis aristata		V							
+ Alectryon tomentosum	R	Tree		5m					
+ Notelaea venosa (S)									
(*) KEITH - NSW21 - NORTHERN HINTERLAND SEMI-MESIC FOREST									
(*) CRA - ?									

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling; H = herb ; Tree = T
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)

Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: FL03 Assessor: JB+CL Date: 29 / 08 /2008

Location: Avon River & Dog Track Creek (Coal Fields)

GPS Projection: Lat-Long (UTM) Datum: (GDA94); WGS84; AGD84 Zone: 56

Latitude / Easting: 0401948 Longitude / Northing: 6449276 Waypoint #: 003

Photo: 2639 / 2640

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish	Clayey	Clay	
(Pale)	(Silty)	Silt	
Yellow	Sandy	Loam	
Orange	Gravely	(Sand)	
Brown	Stony	Gravel	
Red			
Dark		Saline Mud	
Black			
Mottled			

Altitude: 116 m Slope: Aspect: N; NE; E; SE; S; SW; W; NW

Landform: Creek bank moderate slope (4-5m to water)

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
PLAIN		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	A	Slope or hill not specified	F
Downs, open downs, rolling downs, ashy downs, pebbly downs	*	Cliff (steep rocky faces), rocky ledge, rocky outcrop, scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees + permanent water	C	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— + intermittently wet	D	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds + intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		Freshwater lake, lagoon, spring, stream	X
		Freshwater swamp, marsh, soak, seepage area	W
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	VG Very gently inclined	GE Gently inclined	MO Moderately inclined	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	32–56	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class	**Erosional landform pattern**						
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	UL Undulating low hills	RL Rolling low hills	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently undulating rises	UR Undulating rises	RR Rolling rises	SR Steep rises	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	GP Gently undulating plain	UP Undulating plain	RP Rolling plain	B badlands	B Badlands	B Badlands

Disturbance

Fire scars: – %

Feral animal: – %

Weeds: ✓ %5

Other: Grazing cows. %

Health: Pristine / Excellent / Very Good / (Good) / Average / Degraded / Completely Degraded (almost without natives)

Special significance

Cultural: –

Recreational: –

Conservation: Habitat corridor / veg only extents 5-10m from channel

Commercial: –

Other Notes: –

Width of community: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; not linear
Width of total remnant: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; not linear
Total community area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; >50ha
Total remnant area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; >50ha

50m X 10m Plot Information

Canopy Stratum Form: Tree; Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent			*some bare dirt around exposed banks. * some erosion.
Canopy	14m	70	
Mid	8m	50	
Ground	0.20m	60	

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

	Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
	Angophora subvelutina	O	Tree		14					
	Acacia irrorata	O	Tree			8				
	Callistemon salignus. (S)	O	Tree			8				
	Hymenanthera dentata (S)	O	Shrub					2		
	Casuarina cunninghamiana	D	Tree		14					
*	Solanum mauritianum (tobacco)	O						2		
	Lomandra hystrix.	F	Herb							0.6
**	Ligustrum sienense (privet)	F	Shrub			6				
*	Prunus persica (Peach Tree)	F	Tree					4		
	Cynodon dactylon	D	Grass							0.2
	+ E. tereticornis	O								
	(*) KEITH- NSW21- NORTHERN HINTERLAND SEMI-MESIC FOREST									
	(*) CRA - FE47 - REDGUM - APPLE									

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling;
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)

Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: FL04 Assessor: JB+CL Date: 01 / 09 /2008

Location: Outer zone (surrounded by pasture lands) (KP4)

GPS Projection: Lat-Long; UTM Datum: GDA94; WGS84; AGD84 Zone: 56

Latitude / Easting: 400 725 Longitude / Northing: 6445 489 Waypoint #: 026

Photo: 2699 / 2700

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish	Clayey	Clay	
Pale	Silty	Silt	
Yellow	Sandy	Loam	
Orange	Gravely	Sand	
Brown	Stony	Gravel	
Red			
Dark		Saline Mud	
Black			
Mottled			

Altitude: 121 m Slope: Aspect: N; NE; E; SE; S; SW; W; NW

Landform: Very gentle inclination

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
PLAIN		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	A	Slope or hill not specified	F
Downs, open downs, rolling downs, ashy downs, pebbly downs	*	Cliff (steep rocky faces), rocky ledge, rocky outcrop, scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees + permanent water	C	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— + intermittently wet	D	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds + intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		Freshwater lake, lagoon, spring, stream	X
		Freshwater swamp, marsh, soak, seepage area	W
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	VG Very gently inclined	GE Gently inclined	MO Moderately inclined	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	32–56	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class	**Erosional landform pattern**						
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	UL Undulating low hills	RL Rolling low hills	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently undulating rises	UR Undulating rises	RR Rolling rises	SR Steep rises	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	GP Gently undulating plain	UP Undulating plain	RP Rolling plain	B badlands	B Badlands	B Badlands

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Disturbance

Fire scars: moderate 2-4m %5

Feral animal: – %

Weeds: – %

Other: Evidence of previous logging / tracks %5

Health: Pristine / Excellent / Very Good / Good / Average / Degraded / Completely Degraded (almost without natives)

Special significance

Cultural: –

Recreational: –

Conservation: Remaining last large piece remnant vegetation

Commercial: –

Other Notes: Route to be positioned E of remnant boundary in already cleared pasture land

Width of community: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; (not linear)
Width of total remnant: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; (not linear)
Total community area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; (20-50ha) ; >50ha
Total remnant area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; (20-50ha) ; >50ha

50m X 10m Plot Information

Canopy Stratum Form: Tree; Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent			Bare ground = 0 mostly leaf litter/organic debris.
Canopy	16	50	
Mid	4	10	
Ground	0.4	60	

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
E. moluccana	O	T		16					
E. siderophloia	D	T		16					
E. umbra	A	T		16					
callistemon salignus	A	sml T				4			
Exocarpus cupressiformis Native cherry	R	sml T				2			
Acacia ulicifolia	O	Sh				1			
Bursaria spinosa	O	Sh				1.5			
Leucopogon juniperensis	F	Sh						0.5	
Pultenaea villosa	F	Sh				1			
Dianella caerulea	O								0.3
Themeda triandra	A	G							0.4
Entolasia stricta	A	G							0.4
(*) KEITH - NSW69 - HUNTER MACLEAY DRY SCLEROPHYLL FOREST									
(*) CRA - FE71 - IRONBARK									

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling;
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)

Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: FL 05 Assessor: JB+CL Date: 30/08/2008

Location: KP 10.1 (West of Nature Reserve)

GPS Projection: Lat-Long; (UTM) Datum: (GDA94); WGS84; AGD84 Zone: 56

Latitude / Easting: 0398698 Longitude / Northing: 6440431 Waypoint #: 011

Photo: 2662 / 2663

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish	Clayey	Clay	
Pale	Silty	(Silt)	
Yellow	(Sandy)	Loam	
Orange	Gravely	Sand	
(Brown)	Stony	Gravel	
~~Red~~			
Dark		Saline Mud	
Black			
Mottled			

Altitude: 156 m Slope: Aspect: N; NE; E; SE; S; SW; W; NW

Landform: Gully w gentle to moderate slope w cleared pasture land to N + S

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
PLAIN		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	A	Slope or hill not specified	F
Downs, open downs, rolling downs, ashy downs, pebbly downs	*	Cliff (steep rocky faces), rocky ledge, rocky outcrop, scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees + permanent water	C	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— + intermittently wet	(D)	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds + intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		Freshwater lake, lagoon, spring, stream	X
		Freshwater swamp, marsh, soak, seepage area	W
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	VG Very gently inclined	(GE Gently inclined)	MO Moderately inclined	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	32–56	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class	**Erosional landform pattern**						
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	UL Undulating low hills	RL Rolling low hills	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently undulating rises	UR Undulating rises	RR Rolling rises	SR Steep rises	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	GP Gently undulating plain	(UP Undulating plain)	RP Rolling plain	B badlands	B Badlands	B Badlands

Disturbance

Fire scars: — %

Feral animal: Rabbit %

Weeds: Fire weed <5%

Other: Tree chopped down / cow tracks / evidence of past ringbark <5%

Health: Pristine / Excellent / (Very Good) / Good / Average / Degraded / Completely Degraded (almost without natives)

Special significance

Cultural: —

Recreational: —

Conservation: Habitat values

Commercial: —

Other Notes: —

Width of community: <35m wide ; (35-75m) ; 75-150m ; 150-300m ; >300 ; not linear
Width of total remnant: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; (not linear)
Total community area: Does not extend beyond site; <1ha ; (1-5ha); 5-20ha ; 20-50ha ; >50ha
Total remnant area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; (>50ha)

50m X 10m Plot Information

Canopy Stratum Form: Tree; Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent			
Canopy	18	50	
Mid	4	5	
Ground	0.2	30 → bare ground 20%.	

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
Corymbia citriodora	O	T		18					
E Siderophloia	A	T		18					
E. umbra	D	T		18					
Allocasuarina torulsa	O	T				6			
Melaleuca linearifolius	O	T				6			
Acacia irrorata	O	Sh				4			
Bursaria spinosa	A	Sh					1.5		
Leucopogon juniperinus	F	Sh					1		
Acacia ulicifolia	O	Sh					1		
Ozothamnus diosmifolius	R	Sh					0.6		
Imperata cilindrica	A	G							0.5
Hardenbergia violacea	O	V							
* Senecio madagascariensis	O	H							0.2
(*) KEITH - NSW 69 - HUNTER MACLEAY DRY SCLEROPHYLL FOREST									
(*) CRA - FE 33 - DRY FOOTHILLS SPOTTED GUM									

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling;
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)

Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: FL 06 Assessor: JB+CL Date: 30 / 08 /2008

Location: KP 14.3 Creek/riparian veg

GPS Projection: Lat-Long; (UTM) Datum: (GDA94); WGS84; AGD84 Zone: 56

Latitude / Easting: 399 456 Longitude / Northing: 6436 365 Waypoint #: 013

Photo: 2672 / 2673

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish	Clayey	(Clay)	
(Pale)	Silty	Silt	
Yellow	(Sandy)	Loam	
Orange	Gravely	Sand	
(Brown)	Stony	Gravel	
Red			
Dark		Saline Mud	
Black			
Mottled			

Altitude: 95 m Slope: Aspect: N; NE; E; SE; S; SW; W; NW

Landform: Bank is moderate to steep (3m bank)

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
PLAIN		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	A	Slope or hill not specified	F
Downs, open downs, rolling downs, ashy downs, pebbly downs	*	Cliff (steep rocky faces), rocky ledge, rocky outcrop, scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees + permanent water	C	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— + intermittently wet	D	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds + intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		Freshwater lake, lagoon, spring, stream	X
		Freshwater swamp, marsh, soak, seepage area	W
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	VG Very gently inclined	GE Gently inclined	MO Moderately inclined	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	32–56	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class	**Erosional landform pattern**						
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	UL Undulating low hills	RL Rolling low hills	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently undulating rises	UR Undulating rises	RR Rolling rises	SR Steep rises	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	GP Gently undulating plain	(UP Undulating plain)	RP Rolling plain	B badlands	B Badlands	B Badlands

Disturbance

Fire scars: – %

Feral animal: %

Weeds: ✓ Fire weed <5 %

Other: Erosion on banks / grazing / cattle track %20

Health: Pristine / Excellent / Very Good / (Good) / Average / Degraded / Completely Degraded (almost without natives)

Special significance

Cultural: –

Recreational: –

Conservation: movement corridor

Commercial: –

Other Notes: –

Width of community: (<35m wide) ; 35-75m ; 75-150m ; 150-300m ; >300 ; not linear
Width of total remnant: (<35m wide) ; 35-75m ; 75-150m ; 150-300m ; >300 ; not linear
Total community area: Does not extend beyond site; <1ha ; (1-5ha;) 5-20ha ; 20-50ha ; >50ha
Total remnant area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; (>50ha)

50m X 10m Plot Information

Canopy Stratum Form: Tree; Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent	20	<5%	10%. Bare ground esp. on banks.
Canopy	8	70%	
Mid	3	40%	
Ground	0.5	60%	

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
Callistemon salignus	D	T		8					
E. tereticornis	O	T		10					
Mel. linearifolius	F	T		6					
Trystaniopsis laurina	O	T		8					
Backhousia myrtifolia (s)	F	sm T					3		
E. moluccana	O	T	20						
Notelaea venosa (s)	R	sm T					3		
Angophora subvelutina	R	T	20						
Parsonsia straminea (monkey vine)	R	V							
Ma clura cochinchinensis (cock spur)	R	V							
Lomandra histrix	F	G							0.6
Pteridium esculentum	F	Fern							0.5
Imperata cylindrica	F	G							0.5
* Senecio madagascariensis	O	Herb							0.2
(*) KEITH - NSW 4 - DRY RAINFOREST									
(*) CRA - FE 168 - RAINFOREST									

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling;
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)

Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: FL07 Assessor: JB+CL Date: 01/09/2008

Location: KP21 → Along intersection of powerlines

GPS Projection: Lat-Long; (UTM) Datum: (GDA94); WGS84; AGD84 Zone: 56

Latitude / Easting: 0398393 Longitude / Northing: 6430142 Waypoint #: 028

Photo: 2708/

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish	(Clayey)	Clay	
Pale	Silty	Silt	
Yellow	Sandy	(Loam)	
Orange	Gravely	Sand	
(Brown)	Stony	Gravel	
Red			
(Dark)		Saline Mud	
Black			
Mottled			

Altitude: 125 m Slope: Aspect: N; NE; (E); SE; S; SW; W; NW

Landform: Gently undulating Rises

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
PLAIN		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	A	Slope or hill not specified	F
Downs, open downs, rolling downs, ashy downs, pebbly downs	*	Cliff (steep rocky faces), rocky ledge, rocky outcrop, scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees + permanent water	C	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— + intermittently wet	D	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds + intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		Freshwater lake, lagoon, spring, stream	X
		Freshwater swamp, marsh, soak, seepage area	W
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	VG Very gently inclined	GE Gently inclined	MO Moderately inclined	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	32–56	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class	**Erosional landform pattern**						
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	UL Undulating low hills	RL Rolling low hills	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently undulating rises	UR Undulating rises	RR Rolling rises	SR Steep rises	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	GP Gently undulating plain	UP Undulating plain	RP Rolling plain	B badlands	B Badlands	B Badlands

Disturbance

Fire scars: old >3m %

Feral animal: – %

Weeds: ✓ %10

Other: clearing E of boundary for powerlines / logging %

Health: Pristine / Excellent / Very Good / Good / (Average) / (Degraded) / Completely Degraded (almost without natives)

Special significance

Cultural: –

Recreational: –

Conservation: Large remnant patch

Commercial: –

Other Notes: Construct pipeline E of remnant b/w veg line and powerline 10m gap

*Solanum sp. 2 – Photo 2707

Width of community: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; (not linear)
Width of total remnant: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; (not linear)
Total community area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; (>50ha)
Total remnant area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; (>50ha)

50m X 10m Plot Information

Canopy Stratum Form: Tree; Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent			No Bare ground
Canopy	15	60	
Mid	2	10	
Ground	0.3	70	

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

	Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
	E. punctata (s)	D	T		15					
	E. siderophloia	O	T		15					
	E. tereticornis (s)	O	T		15					
	C. citriodora	O	T		15					
	Pratia purpurascens	O	H							0.1
	Leucopogon juniperis	F	H							0.5
	Exocarpus cupressiformis Native cherry	O	Sh						1	
	Solanum sp 1. Wild tomato	O	H							0.5
	Bursaria spinosa	R	Sh						1	
	Solanum pungetium	O	H							0.2
*	Centella asiatica Penny wort	A	H							0.1
**	Romulea rosea (s) Purple Lilly	O	H							0.2
	Dianella caerulea	O	H							0.2
**	Oxalis corniculata (yellow)	R	H							0.10
*	Briza minor		G							
*	Cirsium vulgare Thistle (purple)	O	H							0.5
**	Lantana camara	A	Sh						2	
*	Senecio madagascariensis	R	H							0.2
	(*) KEITH - NSW 21 - NORTHERN HINTERLAND SEMI-MESIC FOREST									
	(*) CRA - FE 134 - SOUTH COAST SHRUBBY GREY GUM									

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling;
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)

Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: FL 08 Assessor: JB + CL Date: 31 / 08 /2008

Location: Koruah River Rossing (KP25)

GPS Projection: Lat-Long; (UTM) Datum: (GDA94); WGS84; AGD84 Zone: 56

Latitude / Easting: 0397 412 Longitude / Northing: 6426 427 Waypoint #: 024

Photo: 2697 / 2698

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish	Clayey	(Clay)	
Pale	Silty	Silt	
Yellow	(Sandy)	Loam	
Orange	Gravely	Sand	
(Brown)	Stony	Gravel	
Red			
Dark		Saline Mud	
Black			
Mottled			

Altitude: 54 m Slope: Aspect: N; NE; E; SE; S; SW; W; NW

Landform: River with moderate - steep banks with cleared pasture land surrounding

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
PLAIN		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	A	Slope or hill not specified	F
Downs, open downs, rolling downs, ashy downs, pebbly downs	*	Cliff (steep rocky faces), rocky ledge, rocky outcrop, scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees + permanent water	(C)	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— + intermittently wet	D	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds + intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		(Freshwater lake, lagoon, spring, stream)	(X)
		Freshwater swamp, marsh, soak, seepage area	W
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	VG Very gently inclined	GE Gently inclined	MO Moderately inclined	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	32–56	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class	**Erosional landform pattern**						
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	UL Undulating low hills	RL Rolling low hills	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently undulating rises	UR Undulating rises	RR Rolling rises	SR Steep rises	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	GP Gently undulating plain	UP Undulating plain	RP Rolling plain	B badlands	B Badlands	B Badlands

Disturbance

Fire scars: – %

Feral animal: Fox (scat ??) %

Weeds: %20

Other: Horses & cattle tracks %

Health: Pristine / Excellent / Very Good / Good / (Average) / Degraded / Completely Degraded (almost without natives)

Special significance

Cultural: –

Recreational: –

Conservation: Riparian corridor / habitat / seed aspersal

Commercial: –

Other Notes: HDD recommended

* flowing water

* platapus possible

Width of community: <35m wide ; (35-75m) ; 75-150m ; 150-300m ; >300 ; not linear
Width of total remnant: <35m wide ; (35-75m) ; 75-150m ; 150-300m ; >300 ; not linear
Total community area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; (>50ha)
Total remnant area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; (>50ha)
bin to ridge veg

50m X 10m Plot Information

Canopy Stratum Form: Tree; Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent			Major veg type of steep banks is exotic wandering due.
Canopy	12	80%	
Mid	4	30%	
Ground	0.5	10-50%	30-40% Bare Ground

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

	Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
	Tristaniopsis laurina (water gum)	F	T			8				
	Syzygium australe	A	T			10				
*	Prunus persica Peach Tree	O	T				4			
	Melia azedarach white cedar	R	T			8				
*	Solanum mauritianum tobacco bush	F	Sml T				2.5			
*	senecio madagascarensis	R	H							0.3
**	Ageratina riparia mist flower	F	S							0.5
	E. tereticornis	F	T		15					
	Commelina cyanea wandering jew.	A	H							0.2
	Callistemon salignus (S)	R	T				4			
	Backhousia myrtifolia	F	T				5			
**	Ligustrum sinense sml leaf privet	O	Sh.					1.5		
	cryptocarya glaucescens (S) Laurel	R	T				6			
	Casuarina cunninghamina	F			15					
	Waterhousia floribunda	A	T			10				
	Lomandra hystrix	F	H							0.5
(*)	KEITH - NSW4 - DRY RAINFOREST									
(*)	CRA - FE 168 - RAINFOREST									

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling;
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)

Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: FL09 Assessor: JB+CL Date: 30/08/2008

Location: West of Karuah River (KP27)

GPS Projection: Lat-Long; (UTM) Datum: (GDA94); WGS84; AGD84 Zone: 56

Latitude / Easting: 0397554 Longitude / Northing: 6424708 Waypoint #: 009

Photo: 2660/2661

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish	(Clayey)	(Clay)	wet/moist
Pale	Silty	Silt	
Yellow	(Sandy)	Loam	
Orange	Gravely	(Sand)	
(Brown)	Stony	Gravel	
Red			
(Dark)		Saline Mud	
Black			
Mottled			

Altitude: 61 m Slope: Moderate/Steep Aspect: N; NE; E; SE; S; SW; W; NW

Landform: Gully with drainage/creek line @ bottom (dry)

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
PLAIN		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	A	Slope or hill not specified	F
Downs, open downs, rolling downs, ashy downs, pebbly downs	*	Cliff (steep rocky faces), rocky ledge, rocky outcrop, scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees + permanent water	C	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— + intermittently wet	(D)	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds + intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		Freshwater lake, lagoon, spring, stream	X
		Freshwater swamp, marsh, soak, seepage area	W
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	VG Very gently inclined	GE Gently inclined	MO Moderately inclined	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	(32–56)	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class	**Erosional landform pattern**						
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	UL Undulating low hills	RL Rolling low hills	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently undulating rises	UR Undulating rises	RR Rolling rises	(SR Steep rises)	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	GP Gently undulating plain	UP Undulating plain	RP Rolling plain	B badlands	B Badlands	B Badlands

Disturbance

Fire scars: – %

Feral animal: – %

Weeds: Numerous 75%

Other: Grazing/cattle track up North <5%

Health: Pristine / Excellent / Very Good / Good / Average / (Degraded) / Completely Degraded (almost without natives)

Special significance

Cultural: –

Recreational: –

Conservation: veg. corridor

Commercial: –

Other Notes: HDD

Sediment control

Width of community: <35m wide ; (35-75m) ; 75-150m ; 150-300m ; >300 ; not linear
Width of total remnant: <35m wide ; (35-75m) ; 75-150m ; 150-300m ; >300 ; not linear
Total community area: Does not extend beyond site; <1ha ; 1-5ha; (5-20ha) ; 20-50ha ; >50ha
Total remnant area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; (>50ha)

50m X 10m Plot Information

Canopy Stratum Form: Tree; Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent			Mostly cleared cattle pasture N & S of Gully.
Canopy	16	50%.	
Mid	2.5	75%.	
Ground	0.6	10% - 100%.	

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
E. umbra (s),	D	T		16					
E. siderophoia	O	T		16					
Alphotonia excelsa	O	T			14				
Melaleuca styphelioides	R	T			10				
* Solanum mauritianum	F	T					3		
Hibiscus heterophyllus	R	Sh					3		
Notelaea venosa (s)	O						2.5		
clematis aristata	R	V							
Senna acclinis	O	T					2.5		
Maclura cochinchinensis cock spur	O	V							
** Lantana camera	D	Sh					2		
* (Stinging Nettle) Urtica incisa	O	Herb							0.8
** Ageratina riparia (s)	F	Herb							0.6
? * Plantago lanceolata (s)	R	Herb							0.5
⊛ KEITH - NSW 69 - HUNTER MACLEAY DRY SCLEROPHYLL FOREST									
⊛ CRA - FE 33 - DRY FOOTHILLS SPOTTED GUM									

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling;
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)

Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: FL10 Assessor: JB+CL Date: 31/08/2008

Location: Karuah River (KP 29·2)

GPS Projection: Lat-Long; (UTM) Datum: (GDA94); WGS84; AGD84 Zone: 56

Latitude / Easting: 398233 Longitude / Northing: 6422387 Waypoint #: 023

Photo:

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish	Clayey	(Clay)	clay on banks
Pale	(Silty)	Silt	silty/sandy banks
Yellow	(Sandy)	Loam	w river pebbles
Orange	Gravely	Sand	
(Brown)	Stony	Gravel	
Red			
Dark		Saline Mud	
Black			
Mottled			

Altitude: 80 m Slope: Aspect: N; NE; E; SE; S; SW; W; NW

Landform: stream w moderate to steep banks

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
PLAIN		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	A	Slope or hill not specified	F
Downs, open downs, rolling downs, ashy downs, pebbly downs	*	Cliff (steep rocky faces), rocky ledge, rocky outcrop, scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees + permanent water	(C)	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— + intermittently wet	D	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds + intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		Freshwater lake, lagoon, spring, stream	(X)
		Freshwater swamp, marsh, soak, seepage area	W
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	VG Very gently inclined	GE Gently inclined	MO Moderately inclined	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	32–56	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class	**Erosional landform pattern**						
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	UL Undulating low hills	RL Rolling low hills	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently undulating rises	UR Undulating rises	RR Rolling rises	SR Steep rises	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	GP Gently undulating plain	UP Undulating plain	RP Rolling plain	B badlands	B Badlands	B Badlands

Disturbance

Fire scars: — %

Feral animal: — %

Weeds: ✓ %20

Other: cattle tracks/flood debris %5

Health: Pristine / Excellent / Very Good / (Good) / (Average) / Degraded / Completely Degraded (almost without natives)

Special significance

Cultural: —

Recreational: —

Conservation: Corridor

Commercial: —

Other Notes: HDD recommended

Width of community: <35m wide ; (35-75m) ; 75-150m ; 150-300m ; >300 ; not linear
Width of total remnant: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; (not linear)
Total community area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; >50ha ?
Total remnant area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; (>50ha)

50m X 10m Plot Information Canopy Stratum Form: Tree; Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent			Large pepples/rocks along creek bank
Canopy	14	50% (N) / 80% (S)	Bare ground 10%
Mid	8	30%	
Ground	1	0 - 80%	

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
Allocasuarina cunninghamana	A	T		16					
* Prunus persica (Peach tree)	R	T				3			
Syzygium australe (s)	A	T		14					
** Ageratina riparia	F	Sh.						0.8	
Acacia floribunda (s)	F	Sh.					1.5		
Pittosporum undulatum (s)	F	Sh.					1.5		
Native plum olive (Elaeodendrum australis)	O	Sh					2		
Duboisia myoporoides (s)	O	T			8			/	
Melastoma malabathricum	R	Sh.					1		
Bursaria spinosa	O	Sh					1		
(Lophos/myrt) Tristaniopsis laurina	O	T			10				
Lomandra histrix	A	Herb					1		
E. tereticornis (North bank)	A	T		16					
Waterhousia floribunda	A	T		14					
** Ligustrum sienense	O	Sh.					1.5		
** Lantana camera (North Bank)	A	Sh.					1		
Commelina cyanea Wander jew	F	Herb.							0.2
(*) KEITH - NSW4 - DRY RAINFOREST									
(*) CRA - FE 168 - RAINFOREST									

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling;
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)

Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: FL 11 Assessor: JBt CL Date: 31/08/2008

Location: Black Camp Road (KP38)

GPS Projection: Lat-Long; (UTM) Datum: (GDA94); WGS84; AGD84 Zone: 56

Latitude / Easting: 396 367 Longitude / Northing: 6414 302 Waypoint #: 021

Photo: 2684 (facing W) - 2694 (Facing E)

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish	Clayey	(Clay)	
(Pale)	Silty	Silt	
Yellow	(Sandy)	Loam	
Orange	Gravely	Sand	
(Brown)	Stony	Gravel	
Red			
Dark		Saline Mud	
Black			
Mottled			

Altitude: 115 m Slope: Aspect: N; NE; E; SE; S; SW; W; NW

Landform: Hill slope (moderate)

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
PLAIN		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	A	Slope or hill not specified	(F)
Downs, open downs, rolling downs, ashy downs, pebbly downs	*	Cliff (steep rocky faces), rocky ledge, rocky outcrop,.scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees + permanent water	C	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— + intermittently wet	D	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds + intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		Freshwater lake, lagoon, spring, stream	X
		Freshwater swamp, marsh, soak, seepage area	W
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	VG Very gently inclined	GE Gently inclined	(MO Moderately inclined)	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	32–56	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class	**Erosional landform pattern**						
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	UL Undulating low hills	(RL Rolling low hills)	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently undulating rises	UR Undulating rises	RR Rolling rises	SR Steep rises	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	GP Gently undulating plain	UP Undulating plain	RP Rolling plain	B badlands	B Badlands	B Badlands

Disturbance

Fire scars: up to 4m ...%50%

Feral animal: ...%

Weeds: ...%

Other: Logging / past clearing / Erosion ...%5%

Health: Pristine / Excellent / Very Good / Good / (Average) / Degraded / Completely Degraded (almost without natives)

previous clearing.

Special significance

Cultural:

Recreational:

Conservation: Large area with some large trees to W.

Commercial:

Other Notes: smaller trees to E (uphill) large trees (DBH >1m) in road reserve option to put pipe to E in smaller trees (possibly previously cleared?)

ground orchid – ph 2685 - 2691

Width of community: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; (not linear)
Width of total remnant: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; (not linear)
Total community area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; (>50ha)
Total remnant area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; (>50ha)

50m X 10m Plot Information

Canopy Stratum Form: Tree; Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent			5-10% Bare ground
Canopy	14	30	
Mid	3	50	
Ground	0.5	50	

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
E. siderophloia	A	T		14					
E. umbra	D	T		14					
C. citriodora	O	T		14					
M. styphelioides	O	T				5			
All. torulosa	O	T				5			
Jacksonia scoparia	O	Sh					2		
A. irrorata	R	T					2		
Acacia blakei (S)	F	T					2		
Bursaria spinosa	A	Sh					2.5		
Acacia ulicifolia	F	Sh					2		
Leucopogon juniperinus	O	Sh					1		
Pultenaea villosa (S)	O	Sh					1		
Hardenbergia violacea	O	V							
Petalochilus catanatus (S)	O	H							0.2
Daviesia ulicifolia sub. (S)	O	Herb							1
Themeda triandra stenophylla	F	G							0.5
Imperata cylindrica	F	G							0.7
Lomandra longifolia	F	Herb							1
Xanthorrhoea johnsonii	O	Sh							1
Dianella caerulea	F	Herb							0.7
Dodonaea triquetra (S)	O	Sh					2		~
(*) KEITH - NSW69 - HUNTER MACLEAY DRY SCLEROPHYLL FOREST									
(*) CRA - FE33 - DRY FOOTHILLS SPOTTED GUM									

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling;
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)

Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: FL 12 Assessor: JB+CL Date: 02 / 09 /2008

Location: Black camp Road (KP 39)

GPS Projection: Lat-Long; (UTM) Datum: (GDA94); WGS84; AGD84 Zone: 56

Latitude / Easting: 039b075 Longitude / Northing: 64.12314 Waypoint #: 057

Photo: 2742

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish (Pale) Yellow (Orange) Brown Red Dark Black Mottled	(Clayey) Silty Sandy Gravely Stony	Clay Silt Loam (Sand) Gravel Saline Mud	with large sandstone rock (metamorphic?)

Altitude: 220 m Slope: Aspect: N; NE; E; SE; S; SW; W; (NW)

Landform:

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
PLAIN		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	A	Slope or hill not specified	F
Downs, open downs, rolling downs, ashy downs, pebbly downs	*	Cliff (steep rocky faces), rocky ledge, rocky outcrop, scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees + permanent water	C	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— + intermittently wet	D	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds + intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		Freshwater lake, lagoon, spring, stream	X
		Freshwater swamp, marsh, soak, seepage area	W
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	VG Very gently inclined	GE Gently inclined	MO Moderately inclined	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	32–56	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class	**Erosional landform pattern**						
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	UL Undulating low hills	RL Rolling low hills	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently undulating rises	UR Undulating rises	RR Rolling rises	SR Steep rises	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	GP Gently undulating plain	UP Undulating plain	RP Rolling plain	B badlands	B Badlands	B Badlands

Disturbance

Fire scars: up to 5m ↑ %20

Feral animal: – %–

Weeds: ✓ <%5

Other: logging (some) <%5

Health: Pristine / Excellent / Very Good / (Good) / Average / Degraded / Completely Degraded (almost without natives)

Special significance

Cultural: –

Recreational: –

Conservation: Remnant veg

Commercial: –

Other Notes: construct pipe in road corridor, if necessary extend uphill SE (erosion control)

Width of community: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; not linear
Width of total remnant: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; not linear
Total community area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; >50ha
Total remnant area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; >50ha

50m X 10m Plot Information Canopy Stratum Form: Tree; Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent			5% Bare ground mostly leaf litter
Canopy	16	40%	
Mid	8	30%	
Ground	1	30%	

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
C. citriodora	F	T		16					
E umbra	D	T		16					
E. propinqua	O	T		16					
E. microcorys	O	T		16					
Indeterminate Compauna Leaf shrub	O	Sh					2		
Acacia irrorata Holly leaf	R	sml T					2		
Podolobium ilicifolium (S) Prickly pultenaea	F	Sh					1.5		
Allocasuarina torulosa.	A	sml T				8			
Daviesia ulicifolia sub. stenophylla	R	sh							0.8
Jacksonia scoparia (S)	O	sml T					2		
Pultenaea villosa	O	sh							0.3
Acacia ulicifolia	O	sh					1.5		
Themeda triandra	O	G						1.5	
Lomandra longifolia	F	G						1.0	
Dianella sp.	O	H						1.0	
Imperata cylindrica	A	G							0.8
* Senecio madagascariensis	O	H							0.3
(*) KEITH - NSW 69 - HUNTER	MACLEAY	DRY SCLEROPHYLL FOREST							
(*) CRA - FE 33 - DRY	FOOTHILLS	SPOTTED GUM							

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling;
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)

Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: FL 13 Assessor: JB+CL Date: 02 / 09 /2008

Location: Black Camp Road (Dark veg from arial map) (KP41)

GPS Projection: Lat-Long; (UTM) Datum: (GDA94); WGS84; AGD84 Zone: 56

Latitude / Easting: 0395185 Longitude / Northing: 6411589 Waypoint #: 058

Photo: 2749

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish	(Clayey)	Clay	
Pale	Silty	Silt	
Yellow	Sandy	Loam	
(Orange)	Gravely	(Sand)	
~~Brown~~	Stony	Gravel	
Red			
(Dark)		Saline Mud	
Black			
Mottled			

Altitude: 130 m Slope: Aspect: N; NE; E; SE; S; SW; W; NW

Landform: Foothill of steep slope.

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
PLAIN		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	A	Slope or hill not specified	F
Downs, open downs, rolling downs, ashy downs, pebbly downs	*	Cliff (steep rocky faces), rocky ledge, rocky outcrop, scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees + permanent water	C	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— + intermittently wet	D	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds + intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		Freshwater lake, lagoon, spring, stream	X
		Freshwater swamp, marsh, soak, seepage area	W
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	VG Very gently inclined	GE Gently inclined	MO Moderately inclined	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	32–56	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class	**Erosional landform pattern**						
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	UL Undulating low hills	RL Rolling low hills	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently / undulating rises	UR Undulating rises	RR Rolling rises	SR Steep rises	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	GP Gently undulating plain	UP Undulating plain	RP Rolling plain	B badlands	B Badlands	B Badlands

Disturbance

Fire scars: — %

Feral animal: — %

Weeds: ✓ %50

Other: Some logging %5

Health: Pristine / Excellent / Very Good / Good / (Average) / (Degraded) / Completely Degraded (almost without natives)

Special significance

Cultural: —

Recreational: —

Conservation: Rare vegetation type (rainforest) / Remnant veg

Commercial: —

Other Notes: Keep pipe to road corridor

Width of community: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; (not linear)
Width of total remnant: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; (not linear)
Total community area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; (>50ha)
Total remnant area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; (>50ha)

50m X 10m Plot Information

Canopy Stratum Form: Tree; Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent			10% bare ground → pebbles/rocks
Canopy	20	60	
Mid	3	70	
Ground	0.2	20	

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

	Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
	E. moluccana	O	T		18					
	E. propinqua	D	T		20					
	E. microcorys	F	T		20					
	E. tereticornis	O	T		20					
	Apananthe philippinensis	R	T		6					
	Backhousia myrtifolia	R	T					6		
	Cissus antarctica (Native grape)	O	V							
	Cissus opaca (Grape) 3-leaflet	O	V							
	Geitonoplesium cymosum (climbing lily)	O	V							
	Melastoma melabathricum (Blue tongue)	R	Sh					1		
	Alphitonia excelsa	F	Sh.					2		
	Acacia irrorata	O	Sh					1		
	Hibiscus sp.	F	Sh					1		
	Ozothamnus diosmifolius	O	Sh					1.5		
	Lomandra longifolia	O						1		
	Goodenia ovata	O	H					1		
	Zieria smithii (s)	R	Sh					1.5		
**	Lantana camara	A	Sh					2		
	Stellaria flaccida (Forest starwort)	F	H							0.1
*	Bidens pilosa (Cobblers pegs)	O	H							0.3
	Ficis coronata (s) Sandpaper fig	O	T					3		
	Diaspyros australis.	O	T					3		
*	Senecio madagascarensis	O	H							0.2
	(*) KEITH - NSW 21 - NORTHERN HINTERLAND SEMI-MESIC FOREST									
	(*) QRA - FE 134 - SOUTH COAST SHRUBBY GREY GUM									

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling;
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)

Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: FL 14 Assessor: JB + CL Date: 01 / 09 /2008

Location: KP 495 MUDDLE – At stream bend (area constraint) Pasture land N & S

GPS Projection: Lat-Long; (UTM) Datum: (GDA94); WGS84; AGD84 Zone: 56

Latitude / Easting: 0391355 Longitude / Northing: 6407956 Waypoint #: 034

Photo: 2709

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish	(Clayey)	Clay	
Pale	Silty	Silt	
Yellow	Sandy	(Loam)	
Orange	Gravely	Sand	
(Brown)	Stony	Gravel	
Red			
(Dark)		Saline Mud	
Black			
Mottled			

Altitude: 60 m Slope: Aspect: N; NE; E; SE; S; SW; (W); NW

Landform: Very gentle slope plain

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
PLAIN		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	(A)	Slope or hill not specified	F
Downs, open downs, rolling downs, ashy downs, pebbly downs	*	Cliff (steep rocky faces), rocky ledge, rocky outcrop, scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees + permanent water	C	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— + intermittently wet	D	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds + intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		Freshwater lake, lagoon, spring, stream	X
		Freshwater swamp, marsh, soak, seepage area	W
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	VG Very gently inclined	GE Gently inclined	MO Moderately inclined	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	32–56	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class	**Erosional landform pattern**						
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	UL Undulating low hills	RL Rolling low hills	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently undulating rises	UR Undulating rises	RR Rolling rises	SR Steep rises	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	(GP Gently undulating plain)	UP Undulating plain	RP Rolling plain	B badlands	B Badlands	B Badlands

Disturbance

Fire scars: >3-4m %20

Feral animal: – %

Weeds: ✓ >%5

Other: some logging / track west of remnant >%5

Health: Pristine / Excellent / Very Good / (Good) / Average / Degraded / Completely Degraded (almost without natives)

Special significance

Cultural: –

Recreational: –

Conservation: Reasonable sized remnant patch, near river bed

Commercial: –

Other Notes: Stream/river west of remnant. Sml strip of regrowth, track and cleared veg to west b/w river and remnant. Suggest site 035 (regrowth) and leave buffer for creek. Regrowth + track to fence line = 15m.

fence line to creek = 5m.

Width of community: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; not linear
Width of total remnant: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; not linear
Total community area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; >50ha
Total remnant area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; >50ha

50m X 10m Plot Information Canopy Stratum Form: Tree; Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent			Bare ground 5%
Canopy	16	50	
Mid	3	60	
Ground	0.3	40	

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
C. citriodora	F	T		16					
E. siderophloia	F	T		16					
E. molucanna	O	T		16					
E. umbra	D	T		16					
M. nodosa	A	sml T					3		
Pultenaea villosa	F	Sh						1	
A. ulicifolia	F	Sh						1.5	
Exocarpus cupressiformis	F	sml T						1.5	
A. irrorata (s)	O	sml T					2		
Ozothamnus diosmifolius	O						2		
Daviesia ulicifolia sub. stenophylla	O	Sh							0.5
Lutecopogon juniperensis	O	Sh							0.5
Dianella caerulea	O	H							0.3
Entolasia stricta (Wiry Grass)	F	G							0.8
Cassytha pubescens (Dodder laurel)	R	V							
Hardenbergia violacea	O	V							
Geitonoplesium sp. (Climbing Lilly)	R	V							
* Senecio madagascariensis	R	H							0.3
Poa sieberiana var sieberiana	O	G							0.2
(*) KEITH - NSW 69 - HUNTER MACLEAY DRY SCLEROPHYLL FOREST									
(*) CRA - FE 33 - DRY FOOTHILL SPOTTED GUM									

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling;
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)

Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: FL 15 Assessor: JBt CL Date: 03/09/2008

Location: SMITH CREEK CROSSING (KP 56.5)

GPS Projection: Lat-Long; (UTM) Datum: (GDA94); WGS84; AGD84 Zone: 56

Latitude / Easting: 0390395 Longitude / Northing: 6401440 Waypoint #: 062

Photo: 2757/2758/2759 (corridor shot)

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish	(Clayey)	Clay	stoney sand in creek bed
Pale	Silty	(Silt)	
Yellow	Sandy	Loam	
Orange	Gravely	Sand	
(Brown)	Stony	Gravel	
Red			
(Dark)		Saline Mud	
Black			
Mottled			

Altitude: 70 m Slope: Aspect: N; NE; E; SE; S; SW; W; NW

Landform: Dry stream bed with moderate slopes

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
PLAIN		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	A	Slope or hill not specified	F
Downs, open downs, rolling downs, ashy downs, pebbly downs	*	Cliff (steep rocky faces), rocky ledge, rocky outcrop, scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees + permanent water	C	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— + intermittently wet	D	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds + intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		Freshwater lake, lagoon, spring, stream	X
		Freshwater swamp, marsh, soak, seepage area	W
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	VG Very gently inclined	GE Gently inclined	MO Moderately inclined	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	32–56	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class	**Erosional landform pattern**						
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	UL Undulating low hills	RL Rolling low hills	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently undulating rises	UR Undulating rises	RR Rolling rises	SR Steep rises	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	GP Gently undulating plain	UP Undulating plain	RP Rolling plain	B badlands	B Badlands	B Badlands

Disturbance

Fire scars: — %

Feral animal: ✓ Hares <5%

Weeds: ✓ <30%

Other: cattle (now fenced off) <5%

Health: Pristine / Excellent / Very Good / Good / Average / Degraded / Completely Degraded (almost without natives)

Special significance

Cultural: —

Recreational: —

Conservation: Corridor connecting 2 lrg reg areas / maybe rare reg type

Commercial: —

Other Notes: HDD if possible. Minimum width necessary (essentially just the width of pipe). South of site remnant stand of eucalypt trees to avoid (go down hill)

Width of community: (<35m wide) ; 35-75m ; 75-150m ; 150-300m ; >300 ; not linear
Width of total remnant: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; (not linear)
Total community area: Does not extend beyond site; <1ha ; (1-5ha); 5-20ha ; 20-50ha ; >50ha
Total remnant area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; (>50ha)

50m X 10m Plot Information

Canopy Stratum Form: Tree; Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent			Bare ground = 30%. Pebbles, stones and cobblers on stream bed (no water)
Canopy	8	80%.	
Mid	3	50%.	
Ground	0.5	20	

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
Backhousia myrtifolia	D	T		8					
Hibiscus heterophyllus	F	T		8					
Aphananthe philippinensis	F	sml T						2	
Indeterminate (s) Alternat serrated leaf smooth	O	sml T						1.5	
Syzygium australe	A	T		8					
# Acacia leiocalyx (s)	R	T		10					
Pyrrosia confluens (climbing fern)	R	F							
Notelaea venosa (native olive)	R	S						1.5	
Mallotus phillopensis (Red kamala)	O	S				3			
Pittosporum undulatum (Yellow tuble flower)	R	S						1.5	
** Rubus ulmifolius	R	S						1.5	
# Leucopogon juniperus.	R	S						1	
Cissus antarctica	R	V							
Eustrephus latifolius (wombat vine)	R	V							
Platycerium superbum staghorn fern	R	F							
Maclura cochinchinensis (Cock spur)	O	V							
Pandorea pandorana (s) 5-leaflet vine	R	V							
# Kennedia rubicunda Red fabiacea	R	V							
Bursaria spinosa	A	Sh						1.5	
** Lantana camara	F	Sh				3			
* Bidens pilosa	R	H							0.8
** Senico madagascaris	O	H							0.2
Scleria sp. Rough sedge	F	Sed							0.7
⊛ KEITH - NSW4 - DRY RAINFOREST									
⊛ CRA - FE168 - RAINFOREST									

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling;
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)
⊛ LHCCREMS - MU 3 - HUNTER VALLEY DRY RAINFOREST
cleared pasture.

Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: FL 16 Assessor: JB + CL Date: 03 / 09 /2008

Location: MAIN PROPERTY - remnant veg w powerlines dividing (KP61)

GPS Projection: Lat-Long; (UTM) Datum: (GDA94); WGS84; AGD84 Zone: 56

Latitude / Easting: 0389900 Longitude / Northing: 6396446 Waypoint #: 063

Photo: 2760 / 2761

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish	Clayey	Clay	
Pale	Silty	Silt	
Yellow	(Sandy)	(Loam)	
Orange	Gravely	Sand	
(Brown)	Stony	Gravel	
Red			
(Dark)		Saline Mud	
Black			
Mottled			

Altitude: 45 m Slope: Aspect: N; NE; E; SE; (S); SW; W; NW

Landform: undulating hill slopes

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
PLAIN		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	A	Slope or hill not specified	(F)
Downs, open downs, rolling downs, ashy downs, pebbly downs	*	Cliff (steep rocky faces), rocky ledge, rocky outcrop, scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees + permanent water	C	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— + intermittently wet	D	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds + intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		Freshwater lake, lagoon, spring, stream	X
		Freshwater swamp, marsh, soak, seepage area	W
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	VG Very gently inclined	(GE Gently inclined)	MO Moderately inclined	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	32–56	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class	**Erosional landform pattern**						
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	UL Undulating low hills	RL Rolling low hills	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently undulating rises	(UR Undulating rises)	RR Rolling rises	SR Steep rises	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	GP Gently undulating plain	UP Undulating plain	RP Rolling plain	B badlands	B Badlands	B Badlands

Disturbance

Fire scars: ✓ up to 3m %

Feral animal: – %

Weeds: – %

Other: – %

Health: Pristine / Excellent / Very Good / Good / Average / Degraded / Completely Degraded (almost without natives)

Special significance

Cultural: –

Recreational: –

Conservation: Large remnant (young) - no large trees though

Commercial: –

Other Notes: Keep pipeline to already cleared powerline corridor (25m wide) * Conservation reserve

Width of community: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; (not linear)
Width of total remnant: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; (not linear)
Total community area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; (>50ha)
Total remnant area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; (>50ha)

50m X 10m Plot Information

Canopy Stratum Form: Tree; Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent			* No Bare ground
Canopy	15	40	
Mid	6	40	
Ground	0.5	60	

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
C. citriodora	F	T		15					
M. nodosa	D	sml T				6			
E. siderophloia	O	T		15					
E umbra (s)	F	T		15					
Leptospermum morrisonii	O	sml T					4		
A. ulicifolia	O	Sh						1.5	
Pultenaea villosa	F	Sh.						1.5	
Stackhousia sp. (s) Indet.	O	Sh							0.3
Bursaria spinosa	O	Sh						2	
Hardenbergia violacea	R	V							
Daviesia ulicifolia sub. stenophylla	R	Sh.						1	
Leucopogon juniperinus	O	Sh						1	
Petalochilus catanatus	O	H							0.2
Lomandra gracilis	O	G							0.2
Entolasia stricta	A	G							0.5
Poa sieberiana var. sieberiana	F	G							0.3
Pratia purpurascens	F	H							0.1
Themeda triandra	O	G							0.5
Gonocarpus teucrioides (Rasp Weed)	R	H							0.3
* Andropogon virginicus									
(*) KEITH - NSW 69 - Hunter Macleay Dry Sclerophyll Forest									
(*) CRA - FE 71 - Ironbark									
(*) LHCCREMS - MU 16 - Seaham Spotted Gum Ironbark Forest									

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling;
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)

Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: EL 17 Assessor: JB+CL Date: 03 / 09 /2008

Location: KP 65.4 – FINLAYSON

GPS Projection: Lat-Long; (UTM) Datum: (GDA94); WGS84; AGD84 Zone: 56

Latitude / Easting: 0387511 Longitude / Northing: 6393144 Waypoint #: 066

Photo: 2803 GREVILLEA SP – PH 2796 – 2802

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish	Clayey	(Clay)	
(Pale)	Silty	Silt	
Yellow	(Sandy)	Loam	
Orange	Gravely	Sand	
(Brown)	Stony	Gravel	
Red grey			
Dark		Saline Mud	
Black			
Mottled			

Altitude: 30 m Slope: Aspect: N; NE; E; SE; S; SW; (W); NW

Landform: Gently sloping plain

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
PLAIN		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	A	Slope or hill not specified	F
Downs, open downs, rolling downs, ashy downs, pebbly downs	*	Cliff (steep rocky faces), rocky ledge, rocky outcrop, scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees + permanent water	C	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— + intermittently wet	D	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds + intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		Freshwater lake, lagoon, spring, stream	X
		Freshwater swamp, marsh, soak, seepage area	W
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	VG Very gently inclined	GE Gently inclined	MO Moderately inclined	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	32–56	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class	**Erosional landform pattern**						
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	UL Undulating low hills	RL Rolling low hills	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently undulating rises	UR Undulating rises	RR Rolling rises	SR Steep rises	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	GP Gently undulating plain	UP Undulating plain	RP Rolling plain	B badlands	B Badlands	B Badlands

Disturbance

Fire scars: — %

Feral animal: X %

Weeds: — %

Other: Track through veg/ some erosion <%5

Health: Pristine / Excellent / Very Good / (Good) / Average / Degraded / Completely Degraded (almost without natives)

Special significance

Cultural: —

Recreational: —

Conservation: Connects to larger remnant forest / NP. GREVILLEA PARVIFLORA (VULNERABLE)

Commercial: —

Other Notes: Pipe construction to be restricted to already cleared power line corridor. If necessary, clear minimum to W

Width of community: <35m wide ; 35-75m ; (75-150m); 150-300m ; >300 ; not linear
Width of total remnant: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; (not linear)
Total community area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; >50ha ?
Total remnant area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; (>50ha)

50m X 10m Plot Information

Canopy Stratum Form: Tree; Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent			
Canopy	12	50/.	
Mid	3.5	5/.-10/.	
Ground	0.8	60/.	

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
C. citriodora	O	T		12					
E. siderophloia	D	T		12					
Leptospermum morrisonii	F	T				2.5			
Exocarpus cupressiformis	R	T				4			
Ozothamnus diosmifolius	O	Sh						1	
Daviesia ulicifolia sub stenophylla	O	Sh							0.5
Ruttenaea villosa	D	Sh						1	
Dillwynia sp. 'trichopoda' (S)	O	Sh							0.5
Grevillea parviflora (sparse white flower)	R	Sh							0.4
Dianella caerulea (Flat leaf)	O	H							0.5
Xanthorrhoea johnsonii	F	Sh							0.5
Themeda triandra	A	G						1	0.5
Entolasia stricta		G							0.4
Hardenbergia violacea	R	V							—
Wurmbea dioica	O	H							0.2
Lomandra gracilis	O	G							0.3
Ptilothrix acusta (S)	O	H							0.4
Lepidosperma laterale	O	H							0.5
Honocarpus teucrioides (Rasp weed)	O	H							0.4
Petalochilus catanatus (white orchid)	F	H							0.3

(*) KEITH - NSW 69 - HUNTER MACLEAY SHRUB/GRASS FOREST

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling;
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)

(*) LHCCREMS - MU 16 - SEAHAM SPOTTED GUM IRONBARK FOREST

(*) CRA - FE71 - IRONBARK

Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: FL18 Assessor: JB+CL Date: 04/08/2008

Location: Wallaroo Nature Reserve KP67 – W of powerline easement

GPS Projection: Lat-Long; (UTM) Datum: (GDA94); WGS84; AGD84 Zone: 56

Latitude / Easting: 386542 Longitude / Northing: 6392485 Waypoint #: 074

Photo: 2709 / 2810

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish	Clayey	(Clay)	
Pale	(Silty)	Silt	
Yellow	Sandy	Loam	
Orange	Gravely	Sand	
(Brown)	Stony	Gravel	
Red			
(Dark)		Saline Mud	
Black			
Mottled			

Altitude: 15 m Slope: Aspect: N; NE; E; SE; S; SW; (W); NW

Landform: Undulating plain

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
(PLAIN)		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	A	Slope or hill not specified	F
Downs, open downs, rolling downs, ashy downs, pebbly downs	*	Cliff (steep rocky faces), rocky ledge, rocky outcrop, scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees + permanent water	C	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— + intermittently wet	D	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds + intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		Freshwater lake, lagoon, spring, stream	X
		Freshwater swamp, marsh, soak, seepage area	W
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	(VG Very gently inclined)	GE Gently inclined	MO Moderately inclined	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	32–56	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class			**Erosional landform pattern**				
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	UL Undulating low hills	RL Rolling low hills	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently undulating rises	UR Undulating rises	RR Rolling rises	SR Steep rises	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	(GP Gently undulating plain)	UP Undulating plain	RP Rolling plain	B badlands	B Badlands	B Badlands

Disturbance

Fire scars: – %

Feral animal: %

Weeds: Lantana < %5

Other: some timber cutting < %5

Health: Pristine / Excellent / Very Good / Good / Average / Degraded / Completely Degraded (almost without natives)

Special significance

Cultural: –

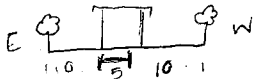
Recreational: –

Conservation: Connects to larger remnant veg (Wallaroo Nature Res)

Commercial: –

Other Notes: Keep pipeline construction to already cleared powerline easement (25m width, 5m b/w poles) West side of easement preferable as narrower strip of veg.

* No trees > 0.5m DBH on W side of easement



Width of community: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; not linear] map.
Width of total remnant: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; not linear
Total community area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; (>50ha)
Total remnant area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; (>50ha)

50m X 10m Plot Information Canopy Stratum Form: Tree; Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent			10% bare ground
Canopy	16	50%	
Mid	5	60%	
Ground	0.5	40%	

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
E. siderophloia	A	T		16					
C. citriodora	A	T		16					
M. nodosa	D	sml T				5			
Acacia irrorata	O	Sh					-	2	
Bursaria spinosa	F	Sh						1.5	
Pultenaea villosa	O	Sh							0.8
Breynia oblongifolia (coffee bush)	O	Sh						1	
Lycopogon juniperis	O	Sh							0.8
Themeda triandra	F	G							0.5
Gahnia aspera (saw sedge)	O	Sed						1	
Dianella caerulea	O	H							0.3
Lomandra multiflora	O	H							0.3
Centella asiatica (Penny wort)	O	H							0.1
Wurmbea dioica (native lily)	O	H							0.1
Pratia purpurascens (purple flower)	O	H							0.1
Entolasia stricta (wiry grass)	O	G							0.5
Eustrephus latifolius (wombat berry)	O	V							
Parsonsia straminea (monkey vine)	O	V							
** Lantana camera	O	Sh						1.5	

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling;
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)

(*) KEITH - HUNTER-MACLEAY DRY SCLEROPHYLL FOREST (NSW 69)
(*) LHCCREMS - MU 16 - SEAHAM SPOTTED GUM - IRONBARK FOREST (OUTSIDE LHCCREMS ARE
(*) CRA - FE 71 - IRONBARK

Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: FL 19 Assessor: ..... Date: 04 / 09 /2008

Location: Wallaroo Nature Reserve (KP 69.5) – To west of powerline easement

GPS Projection: Lat-Long; (UTM) Datum: (GDA94) WGS84; AGD84 Zone: 56

Latitude / Easting: 0385636 Longitude / Northing: 6390758 Waypoint #: 080

Photo: 2811 – 2813

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish	Clayey	(Clay)	
Pale	(Silty)	Silt	
Yellow	Sandy	Loam	
Orange	Gravely	Sand	
(Brown)	Stony	Gravel	
Red			
(Dark)		Saline Mud	
Black			
Mottled			

Altitude: 35m m Slope: ..... Aspect: N; NE; E; SE; S; SW; (W); NW

Landform: Gently undulating plain, small drainage line

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
PLAIN		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	(A)	Slope or hill not specified	F
Downs, open downs, rolling downs, ashy downs, pebbly downs	*	Cliff (steep rocky faces), rocky ledge, rocky outcrop, scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees + permanent water	C	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— + intermittently wet	(D)	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds + intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		Freshwater lake, lagoon, spring, stream	X
		Freshwater swamp, marsh, soak, seepage area	W
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	VG Very gently inclined	GE Gently inclined	MO Moderately inclined	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	32–56	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class	**Erosional landform pattern**						
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	UL Undulating low hills	RL Rolling low hills	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently undulating rises	UR Undulating rises	RR Rolling rises	SR Steep rises	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	GP Gently undulating plain	UP Undulating plain	RP Rolling plain	B badlands	B Badlands	B Badlands

Disturbance

Fire scars: – %

Feral animal: – %

Weeds: ✓ %20

Other: Some logging <%5

Health: Pristine / Excellent / Very Good / Good / Average / Degraded / Completely Degraded (almost without natives)

Special significance

Cultural: –

Recreational: –

Conservation: Possible rare veg type within area / connects to larger section of Wallaroo Nature reserve / remnant veg

Other Notes: Confine pipeline construction to already cleared pipeline easement. Avoid clearing if possible. W narrower strip than E. Some trees >0.5m (Blue gum)

Recognised as significant Roadside veg / envirom - 28420

Width of community: (<35m wide); 35-75m ; 75-150m ; 150-300m ; >300 ; not linear
Width of total remnant: <35m wide; 35-75m ; 75-150m ; 150-300m ; >300 ; not linear
Total community area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; >50ha ?
Total remnant area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; (>50ha)

50m X 10m Plot Information Canopy Stratum Form: Tree; Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent			
Canopy	16	40%	
Mid	5	70%	
Ground	1	30%	

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

	Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
	C. citriodora	A	T		16					
	E. umbra	A	T		16					
	Angophora subvelutina	R	T		16					
	E. tereticornis	O	T		16					
	Alphotonia exselsa	O	Sml T						2	
	Backhousia myrtifolia	A	Sml T				4			
	Pittosporum undulatum (S)	A	Sml T				6			
	Ficis coronata (Sandpaper leaf fig.)	O	Sml T					3.5		
	Acacia irrorata	O	Sml T					3		
	Melicope micrococca (Trifoliate leaves)	O	Sm T					3		
	Lomantra hystrix	A	H					3		
	Bursaria spinosa	O	Sh					3	1.5	
*	Centella asiatica (Penny wort)	F	H							0.5
	Scleria sp.	F	Sed							0.1
	Stephania japonica (Snake vine)	O	V							
	Parsonia straminea (monkey vine)	F	V							
	Clematis aristata	F	V							
	Cissus antarctica	A	V							
**	Lantana camera	F	Sh						2	
*	Verbena bonariensis	F	Sh						2	
*	Gomphocarpis physocarpus (Cotton balloon Bush)	F	Sh						1.5	
*	Senecio madagascaris	O	H							0.2
	(*) Keith - NSW4 - Dry Rainforest									

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling;
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)

(*) LHCCREMS - M43 Hunter Valley Dry Rainforest (Outside LHCCREMS boundary)
(*) FE24 - Clarence Lowlands Spotted gum (Mapped as FE71)

Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: FL 20 Assessor: JB+CL Date: 05 / 09 /2008

Location: KP 73 - JAMES - B/w wetland & River

GPS Projection: Lat-Long; (UTM) Datum: (GDA94); WGS84; AGD84 Zone: 56

Latitude / Easting: 382 408 Longitude / Northing: 6389534 Waypoint #: 094

Photo: 2862 - 2864

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish	Clayey	(Clay)	* waterlogged
Pale	(Silty)	Silt	
Yellow	Sandy	Loam	
Orange	Gravely	Sand	
(Brown)	Stony	Gravel	
~~Red~~			
Dark		Saline Mud	
Black			
Mottled			

Altitude: 6 m Slope: Aspect: N; NE; (E); SE; S; SW; W; NW

Landform: Swamp - western side

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
PLAIN		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	A	Slope or hill not specified	F
Downs, open downs, rolling downs, ashy downs, pebbly downs	*	Cliff (steep rocky faces), rocky ledge, rocky outcrop, scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees + permanent water	C	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— + intermittently wet	D	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds + intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		Freshwater lake, lagoon, spring, stream	X
		Freshwater swamp, marsh, soak, seepage area	(W)
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	VG Very gently inclined	(GE Gently inclined)	MO Moderately inclined	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	32–56	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class	**Erosional landform pattern**						
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	(UL Undulating low hills)	RL Rolling low hills	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently undulating rises	UR Undulating rises	RR Rolling rises	SR Steep rises	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	GP Gently undulating plain	UP Undulating plain	RP Rolling plain	B badlands	B Badlands	B Badlands

Disturbance

Fire scars: ....%

Feral animal: ....%

Weeds: ✓ (→ maybe more = hyacinth) <%5

Other: cattle grazing ....%

Health: Pristine / Excellent / Very Good / Good / Average / Degraded / Completely Degraded (almost without natives)

Special significance

Cultural: —

Recreational: —

Conservation: wetland habitat - system of wetland environ

Commercial: —

Other Notes: Restrict pipeline construction to already cleared pasture lands west of wetland.

* Melaleuca found in site is located in southern end (in sthn end canopy cover = 40%, none in N end)

Width of community: <35m wide ; 35-75m ; (75-150m) ; 150-300m ; >300 ; not linear
Width of total remnant: <35m wide ; 35-75m ; (75-150m) ; 150-300m ; >300 ; not linear
Total community area: Does not extend beyond site; <1ha ; (1-5ha;) 5-20ha ; 20-50ha ; >50ha
Total remnant area: Does not extend beyond site; <1ha ; (1-5ha,) 5-20ha ; 20-50ha ; >50ha

*

50m X 10m Plot Information

Canopy Stratum Form: Tree; Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent	5	<5	* open water in deeper parts of wetland
Canopy	–	–	
Mid	–	–	
Ground	1	70	

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
Melaleuca styphloides	O	T	5						
Casuarina glauca	O	T	6						
Spirodella punctata (S) Duck Weed	F	A							
** Eichhornia crassipes (S) Water hyacinth	F	A							
Juncus pallidus	A	Sed							1
Carex appressa	A	Sed.							1
cynodon dactylon (green couch)	A	G							
* Senecio madagascariensis		F							0.2
* Water plant (persicaria) (?)									
present, hower dead									
so can not be certain									
[it is a water plant]									
* pass burnt									
(*) LHCCREMS MU46: Freshwater Wetland Complex (mapped as non-remnant)									
(*) Keith – Coastal Freshwater Lagoons (56)									
(*) FE – mapped as non-forest									

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling;
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)

Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: FL21 Assessor: JB + CL Date: 04/09/2008

Location: Tea Tree Melaleuca Swamp - Hugh Property - KP75.7

GPS Projection: Lat-Long; (UTM) Datum: (GDA94); WGS84; AGD84 Zone: 56

Latitude / Easting: 0380834 Longitude / Northing: 6387347 Waypoint #: 92

Photo: 2838 - 2842

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish	Clayey	(Clay)	* waterlogged
Pale	(Silty)	Silt	
Yellow	Sandy	Loam	
Orange	Gravely	Sand	
(Brown)	Stony	Gravel	
Red			
(Dark)		Saline Mud	
Black			
Mottled			

Altitude: 12 m Slope: Aspect: N; NE; E; SE; S; SW; W; NW

Landform: Paperbark swamp

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
PLAIN		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	A	Slope or hill not specified	F
Downs, open downs, rolling downs, ashy downs, pebbly downs	*	Cliff (steep rocky faces), rocky ledge, rocky outcrop, scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees + permanent water	C	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— + intermittently wet	D	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds + intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		Freshwater lake, lagoon, spring, stream	X
		Freshwater swamp, marsh, soak, seepage area	W
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	VG Very gently inclined	GE Gently inclined	MO Moderately inclined	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	32–56	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class	**Erosional landform pattern**						
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	UL Undulating low hills	RL Rolling low hills	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently undulating rises	(UR) Undulating rises	RR Rolling rises	SR Steep rises	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	GP Gently undulating plain	UP Undulating plain	RP Rolling plain	B badlands	B Badlands	B Badlands

Disturbance

Fire scars: ✓ up to 4-5 % 50

Feral animal: x %

Weeds: x (senecio curlside plot on pasture & verbena) %

Other: cattle grazing %

Health: Pristine / Excellent / Very Good / Good / Average / Degraded / Completely Degraded (almost without natives)

Special significance

Cultural: –

Recreational: veg

Conservation: Rare community within area

Commercial: –

Other Notes: Keep pipeline construction W of swamp to minimise clearing, hydrology & water quality impacts. If necessary, swamp to S can be crossed.

Width of community: <35m wide ; (35-75m) ; 75-150m ; 150-300m ; >300 ; not linear
Width of total remnant: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; not linear
Total community area: Does not extend beyond site; <1ha ; (1-5ha;) 5-20ha ; 20-50ha ; >50ha
Total remnant area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; >50ha
(*) systems of wetlands along river.

50m X 10m Plot Information Canopy Stratum Form: Tree; Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent			
Canopy	14	30	
Mid	3	10	→ saplings
Ground	1	0 – 70 /	→ bare ground near water edge. Areas of open water, areas of dense grass.

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
Melaleuca quinquenervia(s)	D	T		14					
E. tereticornis	O	T		15					
C. citriodora	O	T		15					
Casuarina glauca	O	sm T		12					
* Centella asiatica (Penny wort)	O	H							0.1
Carex appressa (s)	A	Sed.						1	
Pratia purpurascens (purple flower)	O	H							0.2
Parsonia straminea (monkey vine)	F	V							
(*) LHCCREMS – MU 37 Swamp Mahogany - Paperbark Forest (Mapped as MU41)									
(*) Keith – Coastal Swamp Forest									
(*) FE142 – Swamp Mahogany / FE143 Swamp Oak (Mapped as FE143)									

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling;
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)

Vegetation Monitoring Data Sheet

Job Number: S60665

Site Number: FL22 Assessor: RM Date: 19 / 11 /2008

Location: Remnant Vegetation Near Woods Rd

GPS Projection: Lat-Long; (UTM) Datum: GDA94; (WGS84); AGD84 Zone: 56

Latitude / Easting: 0399333 Longitude / Northing: 6442496 Waypoint #:

Photo: SL 371256/

Soil Colour	Soil Secondary Texture	Soil Primary Texture	Other Soil Notes
Whitish	(Clayey)	Clay	
Pale	Silty	(Silt)	
Yellow	Sandy	(Loam)	
Orange	Gravely	Sand	
(Brown)	Stony	Gravel	
Red			
(Dark)		Saline Mud	
Black			
Mottled			

Altitude: 93 m Slope: Gentle Aspect: N; (NE); E; SE; S; SW; W; NW

Landform:

Table 24 CORVEG landform situation codes

Landform situation	Code	Landform situation	Code
(PLAIN)		HILLS, MOUNTAINS, TABLELANDS	
Not otherwise specified, flat gentle slopes, undulating terrain	(A)	Slope or hill not specified	F
Downs, open downs, rolling downs, ashy downs, pebbly downs	*	Cliff (steep rocky faces), rocky ledge, rocky outcrop, scarp, crack in rock, crevices	L
Alluvial plain or flat, alluvium, flood plain	B	Coastal rocky headland	N
Inland clay pan, salt flat or pan (inland)	U	Top, crest of mountain or ridge	K
Tidal flat, salt flat (coastal)	V	Jump-up, mesa, tableland, plateau	Q
STREAMS		DUNE	
Lakes, banks of lake, river, stream, water course, levees – permanent water	C	Fossil coastal dune, high dune	S
Gully, drainage line, ravine gorge, outwash— – intermittently wet	D	Unspecified coastal dune, beach dune, recent coastal dune, low dune, coastal sandhill	R
Bed of channel—distributaries of inland streams, beds – intermittently flooded	E	Inland dune, inland sandhill	T
		WATER	
		Freshwater lake, lagoon, spring, stream	X
		Freshwater swamp, marsh, soak, seepage area	W
		Gilgai, melon hole, sinkhole	Z
		Saltwater, sea, saltwater swamp	Y

Table 25 CORVEG types of erosional landform patterns by slope and relief class codes

Slope class							
Class	LE Level	(VG Very gently inclined)	GE Gently inclined	MO Moderately inclined	ST Steep	VS Very steep	PR Precipitous
Percentage	<1	1–3	3–10	10–32	32–56	56–100	100
Degrees (rounded to nearest whole number)	0	1–2	3–6	7–18	19–29	30–45	>45
Relief class	**Erosional landform pattern**						
M Very high >300 m (about 500 m)	–	–	–	RM Rolling mountains	SM Steep mountains	VM Very steep mountains	PM Precipitous
H High 90–300 m (about 150 m)	–	–	UH Undulating hills	RH Rolling hills	SH Steep hills	VH Very steep hills	PH Precipitous hills
L Low 30–90 m (about 50 m)	–	–	UL Undulating low hills	RL Rolling low hills	SL Steep low hills	VL Very steep low hills	B Badlands
R Very low 9–30 m (about 15 m)	–	GR Gently undulating rises	UR Undulating rises	RR Rolling rises	SR Steep rises	B Badlands	B Badlands
P Extremely low <9 m)	LP Level plain	(GP Gently undulating plain)	UP Undulating plain	RP Rolling plain	B badlands	B Badlands	B Badlands

Disturbance

Fire scars: ....%

Feral animal: ....%

Weeds: ....%

Other: ....%

Health: Pristine / Excellent / (Very Good) / Good / Average / Degraded / Completely Degraded (almost without natives)

Special significance

Cultural:

Recreational:

Conservation:

Commercial:

Other Notes:

Width of community: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; (not linear)
Width of total remnant: <35m wide ; 35-75m ; 75-150m ; 150-300m ; >300 ; not linear
Total community area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; >50ha
Total remnant area: Does not extend beyond site; <1ha ; 1-5ha; 5-20ha ; 20-50ha ; >50ha

50m X 10m Plot Information

Canopy Stratum Form: Tree; Shrub; Herb; Grass; Aquatic

Stratum	Median Height (m)	Visual Cover Est (%)	Other Structural Notes
Emergent			→ 95% grass cover → 5% bare ground.
Canopy	20m	10%	
Mid	–	–	
Ground	0.5m	<1%	

All woody species present within 50m x 10m plot (plus dominant and threatened non-woody species)

Species	Rel. Dom.	Form	Ht (m) E	T1	T2	T3	S1	S2	G
Eucalyptus propinqua	A	TREE			15m				
Eucalyptus siderophloia	D	TREE		20m					
Eucalyptus paniculata	A	TREE			15m				
Eucalyptus umbra	A	TREE		20m					
Pultenea villosa	O/F	SHRUB					0.5m		
Acacia ulicifolia	O	SHRUB						0.5m	
* NOTE: 4 possible habitat trees within vicinity of plot									
(*) KEITH – REGROWTH									
(*) CRA – REGROWTH									

Species annotations: S = Specimen Collected; * = Exotic Species; ** = Declared Species; + = Outside but adjoining 50m x 10m plot
Height categories: E = Emergent; T1 = Tree 1 stratum, T2 = Tree 2, T3 = Tree 3, S1 = Shrub 1 stratum, S2 = Shrub 2, G = Ground stratum
Form; V = Vine; E = Epiphyte; A = Aquatic; Seed = Seedling; Sap = Sapling;
Ab = Abundance within Stratum (D = dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)

Appendix B

Habitat Assessment Data Sheets

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HLA

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT S6066503 Lucas Energy DATE 29-8-08

SITE NO. 2001 LOCATION Large Remnant 1 NAME LdG/DR

AMG 56H EASTING 0403626 NORTHING 6442910

DISTANCE and DIRECTION from TOWN: SITE IS 5km km (s) NE (N. S. E. W.) OF Stratford IN NSW. (state)

WAS GPS USED? ☑ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☑ WGS 84 or GDA ALTITUDE 153m

GENERAL

☑ Remnant trees ☐ Regrowth ☐ Plantation

☑ Native grasses (trees / shrubs may be present)

☐ Non-native grasses (trees / shrubs may be present)

☐ Improved pasture ☐ Other

Habitat type open Eucalypt forest

RE ~~RE~~ VEG FA LANDFORM RLA

SOIL silty loam

LANDSCAPE

Shape of patch?

☑ Circular / square ☐ Irregular ☐ Strip <50 m

☐ Strip >50 m

Strip details: ☐ Creek / river ☐ Roadside ☐ Windbreak ☐ Other

Width

Area of full patch that contains 1 ha area:

☐ < 3 ha ☐ 3-10 ha ☐ 11-30 ha

☑ 31-100 ha ☐ 101-400 ha ☐ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

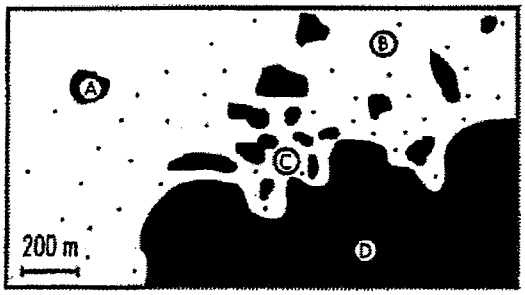
☑ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

☐ A- Isolated ☐ B-Semi isolated

☐ C-Not isolated ☑ D-Continuous tree / shrub

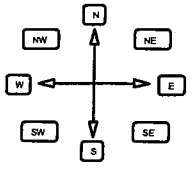
■ Continuous tree/shrub cover ⁘ Scattered trees ☐ Grassland



Is this 1 ha area on a:

☑ Flat ☐ Ridge ☐ Gully ☐ Slope

If slope, give aspect over 20 m



Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller that 3 m):

☐ Absent ☐ Sparse ☑ Open ☐ Dense

If trees present:

☐ single tree species

☑ two or three species

☐ more than three species

Are trees mostly?

☑ native ☐ exotic

Species: E. propinqua① E. cornea② E. siderophyloia①

Average height of overstory?

☐ 3-5 m ☐ 5-10 m ☑ 10-15 m ☐ > 15 m

Are the trees?

☐ Even-aged (Trees mostly the same age or size)

☑ Multi-aged (Trees of varing size or age)

Are there obvious signs of dieback in the tree canopy?

☐ None ☑ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

If shrubs present:

☑ single shrub species

☐ two or three species

☐ more than three species

Are shrubs mostly?

☑ native ☐ exotic

Species: Exocarpus cupressiformas

Low shrub cover (0.5 m – 2 m):

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☑ two or three species

☐ more than three species

Are shrubs mostly?

☑ native ☐ exotic

Species: Comospermum sp. Acacia uliciifolia Pultenea sp.

Dominant ground cover within this 1 ha area:

☐ Tussocks ☐ Hummocks ☑ Continuous grass / herbs

☐ Low Heath ☐ Weeds ☑ ~~Bare dirt / rocks~~ / litter

LAND USE

Used for?

☐ Mixed grazing ☐ Sheep ☐ Cattle

☐ Crops Crop type

☑ Other Other remnant patch.

HLA

HABITAT ASSESSMENT (*cont.*)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0) ☑ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

If present, are they mostly? ☑ dead ☐ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☐ Scattered (1-10) ☑ Common (10-20) ☐ Abundant (> 20)

Fallen trees or branches present >50 cm diameter?

☐ Absent (0) ☑ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☐ Sparse ☑ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10–30 cm diameter?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of > 30 cm diameter?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☐ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☑ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☑ Poor ☐ Average ☐ Good ☐ Excellent

Rock dependent fauna

☑ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☐ Absent ☑ Poor ☐ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☐ Poor ☑ Average ☐ Good ☐ Excellent

OTHER HABITAT QUALITY ASPECTS:

no large hollow bearing trees.
stumps indicating historical logging

WETLANDS

Wetlands present?

☐ YES ☑ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)

☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh

☐ Tidal forest (e.g. mangrove) ☐ Lagoon

☐ Saline / brackish lake / swamp

INLAND WETLAND:

☐ Creek ➡ ☐ Dry ☐ Flowing

☐ River ☐ Floodplain, river flat

☐ Small billabong , pools (<8 ha) ☐ Freshwater lake (>8 ha)

☐ Shrubby swamp ☐ Wooded swamp

☐ Gilgai ☐ Claypan

☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank

☐ Irrigation channel, rice field ☐ Wastewater treatment

☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☐ < 2 ha ☐ 2-8 ha ☐ 8-100 ha ☐ >100 ha

➡ Water mostly

☐ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed

☐ Islands for birds to roost and nest

☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat

☐ Fencing to exclude grazing stock from direct access to the waters edge

☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

remnant patch surrounded by cleared grazing land.

Photo: · 101-0236 (koala scratches)
· 101-0237 (facing SE)

Grey gums w. recent + historical scratches 4x50m walked - 18 trees noted.

Scats S01-S04 collected.

SITE NO. 2001

HLA

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT S6066503 Lucas Energy DATE 29-8-08

SITE NO. 2002 LOCATION Large Remnant 2 NAME DR/LdG

AMG 56H EASTING 0403129 NORTHING 6448541

DISTANCE and DIRECTION from TOWN: SITE IS 4km km (s) NE (N. S. E. W.) OF Stratford IN NSW (state)

WAS GPS USED? ☑ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☑ WGS 84 or GDA ALTITUDE 128m

GENERAL

☑ Remnant trees ☐ Regrowth ☐ Plantation

☑ Native grasses (trees / shrubs may be present)

☐ Non-native grasses (trees / shrubs may be present)

☐ Improved pasture ☐ Other

Habitat type open Eucalypt forest

RE ~ VEG FA LANDFORM PLA

SOIL silty loam

LANDSCAPE

Shape of patch?

☑ Circular / square ☐ Irregular ☐ Strip <50 m

☐ Strip >50 m

Strip details: ☐ Creek / river ☐ Roadside ☐ Windbreak ☐ Other

Width

Area of full patch that contains 1 ha area:

☐ < 3 ha ☐ 3-10 ha ☐ 11-30 ha

☑ 31-100 ha ☐ 101-400 ha ☐ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

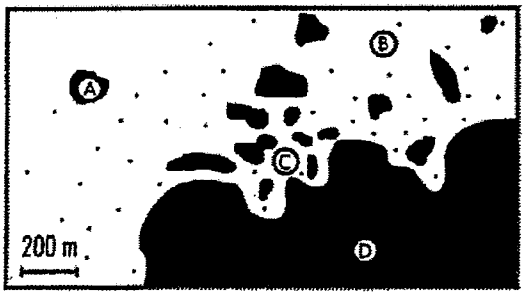
☑ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

☐ A- Isolated ☐ B-Semi isolated

☐ C-Not isolated ☑ D-Continuous tree / shrub

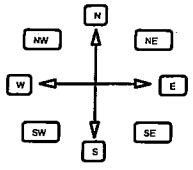
■ Continuous tree/shrub cover ⁘ Scattered trees ☐ Grassland



Is this 1 ha area on a:

☑ Flat ☐ Ridge ☐ Gully ☑ Slope drainage lines

If slope, give aspect over 20 m



Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller that 3 m):

☐ Absent ☐ Sparse ☑ Open ☐ Dense

If trees present:

☐ single tree species

☑ two or three species

☐ more than three species

Are trees mostly?

☑ native ☐ exotic

Species: E. moluccana① E. carnea② E. siderophloia①

Average height of overstory?

☐ 3-5 m ☐ 5-10 m ☐ 10-15 m ☑ > 15 m

Are the trees?

☐ Even-aged (Trees mostly the same age or size)

☑ Multi-aged (Trees of varing size or age)

Are there obvious signs of dieback in the tree canopy?

☐ None ☑ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

If shrubs present:

☑ single shrub species

☐ two or three species

☐ more than three species

Are shrubs mostly?

☑ native ☐ exotic

Species: Exocarpus cupressiformas

Low shrub cover (0.5 m – 2 m):

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☑ two or three species

☐ more than three species

Are shrubs mostly?

☑ native ☐ exotic

Species: Acacia ulifolcia Bursaria spinosa Comospermum sp.

Dominant ground cover within this 1 ha area:

☐ Tussocks ☐ Hummocks ☑ Continuous grass / herbs

☐ Low Heath ☐ Weeds ☑ ~~Bare dirt / rocks~~ / litter

LAND USE

Used for?

☐ Mixed grazing ☐ Sheep ☐ Cattle

☐ Crops Crop type

☑ Other Other remnant patch.

HLA

HABITAT ASSESSMENT (*cont.*)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☑ Abundant (>10)

If present, are they mostly? ☑ dead ☑ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☐ Scattered (1-10) ☑ Common (10-20) ☐ Abundant (> 20)

Fallen trees or branches present >50 cm diameter?

☑ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☑ Sparse ☐ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10–30 cm diameter?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of > 30 cm diameter?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☐ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☑ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☐ Poor ☑ Average ☐ Good ☐ Excellent

Rock dependent fauna

☑ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☐ Absent ☐ Poor ☑ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☐ Poor ☐ Average ☑ Good ☐ Excellent

OTHER HABITAT QUALITY ASPECTS:

some historical thinning of trees.

European Hare

superb. Fairy Wrens

WETLANDS

Wetlands present?

☐ YES ☑ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)

☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh

☐ Tidal forest (e.g. mangrove) ☐ Lagoon

☐ Saline / brackish lake / swamp

INLAND WETLAND:

☐ Creek ➡ ☐ Dry ☐ Flowing

☐ River ☐ Floodplain, river flat

☐ Small billabong , pools (<8 ha) ☐ Freshwater lake (>8 ha)

☐ Shrubby swamp ☐ Wooded swamp

☐ Gilgai ☐ Claypan

☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank

☐ Irrigation channel, rice field ☐ Wastewater treatment

☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☐ < 2 ha ☐ 2-8 ha ☐ 8-100 ha ☐ >100 ha

➡ Water mostly

☐ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed

☐ Islands for birds to roost and nest

☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat

☐ Fencing to exclude grazing stock from direct access to the waters edge

☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

remnant patch continuous w. 2001 surrounded by cleared grazing land.

Photo: 101-0238 (facing S)

echidna diggings - noted within greater area

scat SOS

scratches not noted on koala prefered trees (4x50m walked).

SITE NO. 2002

HLA

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT S6066503 Lucas Energy DATE 29-8-08

SITE NO. 2003 LOCATION Avon R + Dog Trap Ck NAME DR + LdG

AMG 56H EASTING 0401948 NORTHING 6449280

DISTANCE and DIRECTION from TOWN: SITE IS 4km km (s) NNE (N. S. E. W.) OF Stratford. IN NSW (state)

WAS GPS USED? ☑ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☑ WGS 84 or GDA ALTITUDE 108m

GENERAL

☑ Remnant trees ☐ Regrowth ☐ Plantation

☑ Native grasses (trees / shrubs may be present)

☐ Non-native grasses (trees / shrubs may be present)

☐ Improved pasture ☐ Other

Habitat type riparian remnant

RE ~~ VEG MK LANDFORM STC

SOIL silty sand

LANDSCAPE

Shape of patch?

☐ Circular / square ☐ Irregular ☑ Strip <50 m

☐ Strip >50 m

➡ Strip details: ☑ Creek / river ☐ Roadside ☐ Windbreak ☐ Other

Width 30-40m

Area of full patch that contains 1 ha area:

☐ < 3 ha ☐ 3-10 ha ☑ 11-30 ha

☐ 31-100 ha ☐ 101-400 ha ☐ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

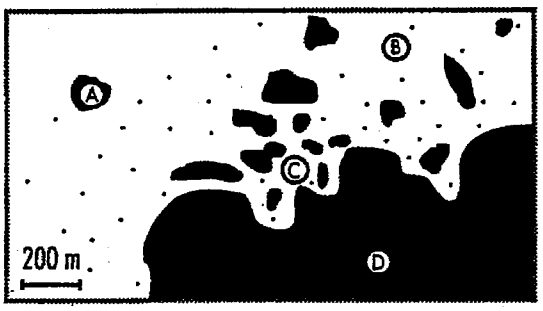
☑ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

☐ A- Isolated ☐ B-Semi isolated

☐ C-Not isolated ☑ D-Continuous tree / shrub

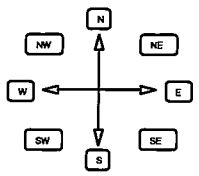
■ Continuous tree/shrub cover ⁘ Scattered trees ☐ Grassland



Is this 1 ha area on a:

☑ Flat ☐ Ridge ☐ Gully ☑ Slope watercourse

If slope, give aspect over 20 m



Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller that 3 m):

☐ Absent ☐ Sparse ☑ Open ☐ Dense

If trees present:

☐ single tree species

☑ two or three species

☐ more than three species

Are trees mostly?

☑ native ☐ exotic

Species: Angophora subvelutina② Cassuarina cunninghamiana

Average height of overstory?

☐ 3-5 m ☐ 5-10 m ☑ 10-15 m ☐ > 15 m

Are the trees?

☐ Even-aged (Trees mostly the same age or size)

☑ Multi-aged (Trees of varing size or age)

Are there obvious signs of dieback in the tree canopy?

☐ None ☑ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☐ two or three species

☑ more than three species

Are shrubs mostly?

☑ native ☑ exotic

Species: Acacia irrorata ⊛Solomon morisianum exotic Mel / Calistemon sp. ⊛Ligustrum sienense

Low shrub cover (0.5 m – 2 m):

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☑ two or three species

☐ more than three species

Are shrubs mostly?

☑ native ☑ exotic

Species: Hymenanthera dentata ⊛Solomon morisianum

Dominant ground cover within this 1 ha area:

☐ Tussocks ☐ Hummocks ☑ Continuous grass ~~/ herbs~~

☐ Low Heath ☐ Weeds ☑ Bare dirt / ~~rocks / litter~~

LAND USE

Used for?

☐ Mixed grazing ☐ Sheep ☑ Cattle

☐ Crops Crop type

☐ Other Other

HLA

HABITAT ASSESSMENT (*cont.*)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☑ Abundant (>10)

If present, are they mostly? ☐ dead ☑ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☐ Scattered (1-10) ☑ Common (10-20) ☐ Abundant (> 20)

Fallen trees or branches present >50 cm diameter?

☑ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☑ Sparse ☐ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10–30 cm diameter?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of > 30 cm diameter?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☐ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☑ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☐ Poor ☑ Average ☐ Good ☐ Excellent

Rock dependent fauna

☑ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☐ Absent ☑ Poor ☐ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☐ Poor ☑ Average ☐ Good ☐ Excellent

OTHER HABITAT QUALITY ASPECTS: heard frogs.
cattle access to water evident
herbs/shrubs heavily grazed
Magpies, cattle, egret, grey fantail, white bowed scrubwren
Rabbit warren? (photo: 101-0240)
eastern + crimson rosellas, noisy miners, grey butcherbird, purple swamphen.

WETLANDS

Wetlands present?

☑ YES ☐ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)

☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh

☐ Tidal forest (e.g. mangrove) ☐ Lagoon

☐ Saline / brackish lake / swamp

INLAND WETLAND:

☑ Creek ➡ ☐ Dry ☑ Flowing (just)

☐ River ☐ Floodplain, river flat

☐ Small billabong, pools (<8 ha) ☐ Freshwater lake (>8 ha)

☐ Shrubby swamp ☐ Wooded swamp

☐ Gilgai ☐ Claypan

☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank

☐ Irrigation channel, rice field ☐ Wastewater treatment

☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☐ < 2 ha ☐ 2-8 ha ☑ 8-100 ha ☐ >100 ha

➡ Water mostly

☑ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed

☑ Islands for birds to roost and nest

☑ Dead or living trees in the water (partly submerged) for roosting and nesting habitat

☐ Fencing to exclude grazing stock from direct access to the waters edge

☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

erosion + exposed banks

Photo: 101-0241 (facing N)
101-0242 (facing S)

riparian vegetation limited to main channel width - not extending into pasture

some peach trees

SITE NO. 2003

HLA

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT S6066503 Lucas Energy DATE 30-8-08

SITE NO. 2004 LOCATION KP27 Karuah River gully (W) NAME DR / LdG

AMG 56H EASTING 0397560 NORTHING 6424699

DISTANCE and DIRECTION from TOWN: SITE IS 4km km (s) NNW (N. S. E. W.) OF Gloucester IN NSW (state)

WAS GPS USED? ☑ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☑ WGS 84 or GDA ALTITUDE 58m

GENERAL

☑ Remnant trees ☐ Regrowth ☐ Plantation

☑ Native grasses (trees / shrubs may be present)

☐ Non-native grasses (trees / shrubs may be present)

☐ Improved pasture ☐ Other

Habitat type Gully remnant

RE ~~ VEG FW LANDFORM GUL

SOIL sandy clay

LANDSCAPE

Shape of patch?

☐ Circular / square ☐ Irregular ☐ Strip <50 m

☑ Strip >50 m

➡ Strip details: ☐ Creek / river ☐ Roadside ☐ Windbreak ☑ Other Gully

Width 50m

Area of full patch that contains 1 ha area:

☐ < 3 ha ☐ 3-10 ha ☐ 11-30 ha

☐ 31-100 ha ☐ 101-400 ha ☑ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

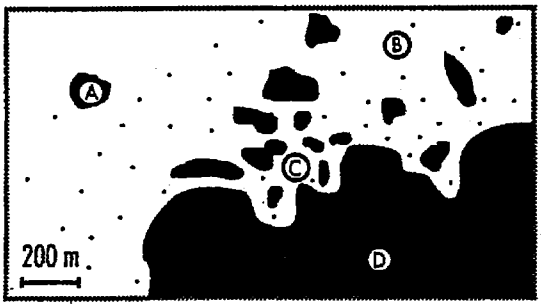
☑ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

☐ A- Isolated ☐ B-Semi isolated

☐ C-Not isolated ☑ D-Continuous tree / shrub

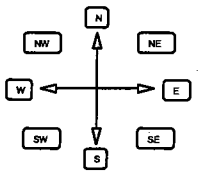
■ Continuous tree/shrub cover ⁘ Scattered trees ☐ Grassland



Is this 1 ha area on a:

☐ Flat ☐ Ridge ☑ Gully ☐ Slope

If slope, give aspect over 20 m 40° N



Degrees of slope over 20 m: 25° S

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller that 3 m):

☐ Absent ☐ Sparse ☑ Open ☐ Dense

If trees present:

☐ single tree species

☐ two or three species

☑ more than three species

Are trees mostly?

☑ native ☐ exotic

Species: E. carnea① E. siderophloia① Alphitonia excelsa Melaleuca stypheloides

Average height of overstory?

☐ 3-5 m ☐ 5-10 m ☑ 10-15 m ☐ > 15 m

Are the trees?

☐ Even-aged (Trees mostly the same age or size)

☑ Multi-aged (Trees of varing size or age)

Are there obvious signs of dieback in the tree canopy?

☐ None ☑ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☐ two or three species

☑ more than three species

Are shrubs mostly?

☑ native ☑ exotic

Species: *Solanum mauritianum Senna acclemis Hibiscus heterophyllus Notelaea sp.

Low shrub cover (0.5 m – 2 m):

☐ Absent ☐ Scattered ☑ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☑ two or three species

☐ more than three species

Are shrubs mostly?

☐ native ☑ exotic

Species: *Lantana camera

Dominant ground cover within this 1 ha area:

☐ Tussocks ☐ Hummocks ☑ Continuous grass / herbs

☐ Low Heath ☐ Weeds ☐ Bare dirt / rocks / litter

LAND USE

Used for?

☐ Mixed grazing ☐ Sheep ☐ Cattle

☐ Crops Crop type

☑ Other Other remnant w. cattle N & S

HLA

HABITAT ASSESSMENT (*cont.*)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0) ☑ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

If present, are they mostly? ☐ dead ☑ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☑ Scattered (1-10) ☐ Common (10-20) ☐ Abundant (> 20)

Fallen trees or branches present >50 cm diameter?

☑ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☑ Sparse ☐ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10-30 cm diameter?

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

limited to creek bed.

Surface rocks of > 30 cm diameter?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☐ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☑ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☑ Poor ☐ Average ☐ Good ☐ Excellent

Rock dependent fauna

☑ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☐ Absent ☑ Poor ☐ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☐ Poor ☐ Average ☑ Good ☐ Excellent

OTHER HABITAT QUALITY ASPECTS:

grey fantail, bell bird (heard), yellow thornbill, large billed scrubwren, brown cuckoo dove, kokaburra, swift

bandicoot foraging pits (photo: 101-0246)

WETLANDS

Wetlands present?

☑ YES ☐ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)

☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh

☐ Tidal forest (e.g. mangrove) ☐ Lagoon

☐ Saline / brackish lake / swamp

INLAND WETLAND:

☑ Creek ➡ ☑ Dry but vegetated. ☐ Flowing

☐ River ☐ Floodplain, river flat

☐ Small billabong, pools (<8 ha) ☐ Freshwater lake (>8 ha)

☐ Shrubby swamp ☐ Wooded swamp

☐ Gilgai ☐ Claypan

☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank

☐ Irrigation channel, rice field ☐ Wastewater treatment

☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☑ < 2 ha ☐ 2-8 ha ☐ 8-100 ha ☐ >100 ha

➡ Water mostly

☑ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed

☐ Islands for birds to roost and nest

☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat

☐ Fencing to exclude grazing stock from direct access to the waters edge

☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Photo: facing W 101-0245

creek E of proposed alignment (Karuah R

* presence of platypus advised by landholder ∴ HDD suggested

vegetated gully w. continuous groundcover (lantana common + w. raspberry) connects ridge to W with creek to E.

steep slopes W of Telstra cable

sediment control critical

GPS-005 (photo: 101-0247) 0397574 6424617 GreyGum

* well-used by koala / possum – no scats

SITE NO. 2004

HLA

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT S6066503 Lucas Energy DATE 30-8-08

SITE NO. 2005 LOCATION KP10 near reserved sanctuary NAME LdG1DR

AMG 56H EASTING 039869 NORTHING 6440440

DISTANCE and DIRECTION from TOWN: SITE IS 6km km (s) SSE (N. S. E. W.) OF Stratford IN NSW (state)

WAS GPS USED? ☑ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☑ WGS 84 or GDA ALTITUDE 149m

GENERAL

☑ Remnant trees ☐ Regrowth ☐ Plantation

☑ Native grasses (trees / shrubs may be present)

☐ Non-native grasses (trees / shrubs may be present)

☐ Improved pasture ☐ Other

Habitat type open eucalypt forest

RE ~~~ VEG FA LANDFORM DDE

SOIL Sandy silt

LANDSCAPE

Shape of patch?

☐ Circular / square ☐ Irregular ☑ Strip <50 m

☐ Strip >50 m

➡ Strip details: ☑ Creek / river ☐ Roadside ☐ Windbreak ☐ Other

Width 40m

Area of full patch that contains 1 ha area:

☐ < 3 ha ☐ 3-10 ha ☐ 11-30 ha

☐ 31-100 ha ☑ 101-400 ha ☐ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

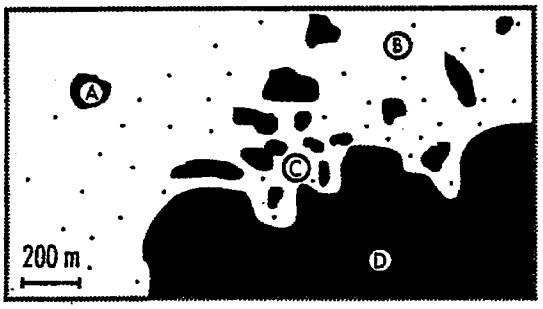
☑ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

☐ A- Isolated ☐ B-Semi isolated

☑ C-Not isolated ☐ D-Continuous tree / shrub

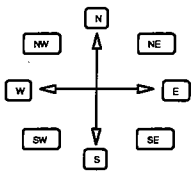
■ Continuous tree/shrub cover ⁘ Scattered trees ☐ Grassland



Is this 1 ha area on a:

☑ Flat ☐ Ridge ☐ Gully ☑ Slope v. slight

If slope, give aspect over 20 m



Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller that 3 m):

☐ Absent ☐ Sparse ☑ Open ☐ Dense

If trees present:

☐ single tree species

☐ two or three species

☑ more than three species

Are trees mostly?

☑ native ☐ exotic

Species: Corymbia citriodora ① E. siderophloia ① E. carnea ② Allocasuarina torulosa

Average height of overstory?

☐ 3-5 m ☐ 5-10 m ☐ 10-15 m ☑ > 15 m

Are the trees?

☐ Even-aged (Trees mostly the same age or size)

☑ Multi-aged (Trees of varing size or age)

Are there obvious signs of dieback in the tree canopy?

☐ None ☑ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☑ two or three species

☐ more than three species

Are shrubs mostly?

☑ native ☐ exotic

Species: Melaleuca linarefolia A. irrorata

Low shrub cover (0.5 m – 2 m):

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☑ two or three species

☐ more than three species

Are shrubs mostly?

☑ native ☐ exotic

Species: Bursaria spinosa Acacia ulicifolia Leucopogon juniperinus Comospermum sp.

Dominant ground cover within this 1 ha area:

☐ Tussocks ☐ Hummocks ☑ Continuous grass / herbs

☐ Low Heath ☐ Weeds ☑ Bare dirt / rocks / litter

LAND USE

Used for?

☐ Mixed grazing ☐ Sheep ☑ Cattle

☐ Crops Crop type

☐ Other Other

HLA

HABITAT ASSESSMENT (*cont.*)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0) ☐ Scattered (1-5) ☑ Common (6-10) ☐ Abundant (>10)

If present, are they mostly? ☐ dead ☑ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☐ Scattered (1-10) ☑ Common (10-20) ☐ Abundant (> 20)

Fallen trees or branches present >50 cm diameter?

☐ Absent (0) ☑ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☐ Sparse ☑ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10–30 cm diameter?

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

Surface rocks of > 30 cm diameter?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☑ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☑ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☐ Poor ☑ Average ☐ Good ☐ Excellent

Rock dependent fauna

☑ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☐ Absent ☐ Poor ☑ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☐ Poor ☐ Average ☑ Good ☐ Excellent

OTHER HABITAT QUALITY ASPECTS:

white winged chough, grey crowned babbler.
noisy miner, gallah
rabbit warren w 5-6 holes.
rabbit
no koala scratchings observed

WETLANDS

Wetlands present?

☑ YES ☐ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)

☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh

☐ Tidal forest (e.g. mangrove) ☐ Lagoon

☐ Saline / brackish lake / swamp

INLAND WETLAND:

☑ Creek ➡ ☑ Dry ☐ Flowing some ponded sections.

☐ River ☐ Floodplain, river flat

☐ Small billabong , pools (<8 ha) ☐ Freshwater lake (>8 ha)

☐ Shrubby swamp ☐ Wooded swamp

☐ Gilgai ☐ Claypan

☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank

☐ Irrigation channel, rice field ☐ Wastewater treatment

☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☐ < 2 ha ☐ 2-8 ha ☐ 8-100 ha ☐ >100 ha

➡ Water mostly

☐ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed

☐ Islands for birds to roost and nest

☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat

☐ Fencing to exclude grazing stock from direct access to the waters edge

☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Photo: 101-0248 (facing W)

Drainage line Eward w. cattle grazing throughout + cleared pasture N + S
Reserved sanctuary located directly adjacent E
Small powerline corridor on fenceline.
drainage line not fenced off for cattle.
banks undercut + erosion evident
historic logging within remnant

SITE NO. 2005

HLA

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT S6066503 Lucas Energy DATE 30-8-08

SITE NO. 2006 LOCATION KP14.4 NAME LDG/DR

AMG 56H EASTING 0399455 NORTHING 6463587

DISTANCE and DIRECTION from TOWN: SITE IS 10.2km km (s) SSW (N. S. E. W.) OF Stratford IN NSW (state)

WAS GPS USED? ☑ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☑ WGS 84 or GDA ALTITUDE 86m

GENERAL

☑ Remnant trees ☐ Regrowth ☐ Plantation

☑ Native grasses (trees / shrubs may be present)

☐ Non-native grasses (trees / shrubs may be present)

☐ Improved pasture ☐ Other

Habitat type riparian remnant

RE — VEG MK LANDFORM STC

SOIL Sandy clay.

LANDSCAPE

Shape of patch?

☐ Circular / square ☐ Irregular ☑ Strip <50 m

☐ Strip >50 m

➡ Strip details: ☑ Creek / river ☐ Roadside ☐ Windbreak ☐ Other

Width

Area of full patch that contains 1 ha area:

☐ < 3 ha ☑ 3-10 ha ☐ 11-30 ha

☐ 31-100 ha ☐ 101-400 ha ☐ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

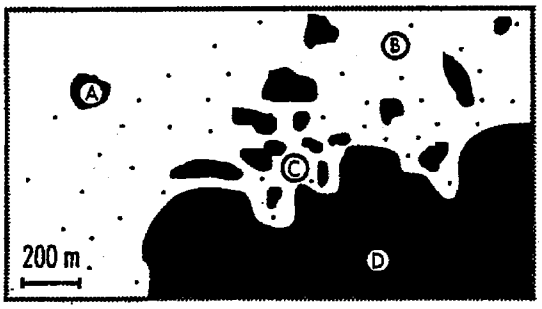
☑ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

☐ A- Isolated ☐ B-Semi isolated

☐ C-Not isolated ☑ D-Continuous tree / shrub

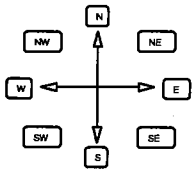
■ Continuous tree/shrub cover ⊡ Scattered trees ☐ Grassland



Is this 1 ha area on a:

☑ Flat ☐ Ridge ☐ Gully ☑ Slope drainage depression

If slope, give aspect over 20 m



Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller that 3 m):

☐ Absent ☐ Sparse ☑ Open ☐ Dense

If trees present:

☐ single tree species

☐ two or three species

☑ more than three species

Are trees mostly?

☑ native ☐ exotic

Species: Melaleuca sp. E. mdlucana① E. teriticornis① M. linearifolius② Angophora② subvelutina.

Average height of overstory?

☐ 3-5 m ☐ 5-10 m ☑ 10-15 m ☐ > 15 m

Are the trees?

☐ Even-aged (Trees mostly the same age or size)

☑ Multi-aged (Trees of varing size or age)

Are there obvious signs of dieback in the tree canopy?

☐ None ☑ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☑ two or three species

☐ more than three species

Are shrubs mostly?

☑ native ☐ exotic

Species: Gossia sp. Notelaea sp.

Low shrub cover (0.5 m – 2 m):

☐ Absent ☐ Scattered ☐ Common ☐ Abundant

If shrubs present:

☑ single shrub species

☐ two or three species

☐ more than three species

Are shrubs mostly?

☑ native ☐ exotic

Species: Gossia sp.

Dominant ground cover within this 1 ha area:

☐ Tussocks ☐ Hummocks ☑ Continuous grass / herbs

☐ Low Heath ☐ Weeds ☑ Bare dirt / rocks / litter

LAND USE

Used for?

☐ Mixed grazing ☐ Sheep ☑ Cattle

☐ Crops Crop type

☐ Other Other

HLA

HABITAT ASSESSMENT (*cont.*)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0) ☑ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

If present, are they mostly? ☐ dead ☑ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☐ Scattered (1-10) ☑ Common (10-20) ☐ Abundant (> 20)

Fallen trees or branches present >50 cm diameter?

☑ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☑ Sparse ☐ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10–30 cm diameter?

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

limited to creek bed.

Surface rocks of > 30 cm diameter?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☑ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☑ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☑ Poor ☐ Average ☐ Good ☐ Excellent

Rock dependent fauna

☑ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☐ Absent ☐ Poor ☑ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☐ Poor ☑ Average ☐ Good ☐ Excellent

OTHER HABITAT QUALITY ASPECTS: noisy friarbird, crimson rosella

cattle access to water evident

heard frogs

(x) large Angophora subvelutina @ GPS 006 56H 0399472 6436342

↳ important habitat to maintain (photo: 101-0251)

(also s of creek bends →)

WETLANDS

Wetlands present?

☑ YES ☐ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)

☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh

☐ Tidal forest (e.g. mangrove) ☐ Lagoon

☐ Saline / brackish lake / swamp

INLAND WETLAND:

☑ Creek ➡ ☐ Dry ☑ Flowing ? possibly pooled

☐ River ☐ Floodplain, river flat

☐ Small billabong , pools (<8 ha) ☐ Freshwater lake (>8 ha)

☐ Shrubby swamp ☐ Wooded swamp

☐ Gilgai ☐ Claypan

☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank

☐ Irrigation channel, rice field ☐ Wastewater treatment

☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☐ < 2 ha ☑ 2-8 ha ☐ 8-100 ha ☐ >100 ha

➡ Water mostly

☑ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed

☐ Islands for birds to roost and nest

☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat

☐ Fencing to exclude grazing stock from direct access to the waters edge

☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

erosion + exposed banks

bends in channel E of survey site (photo: 101-0252) with roots + bank collapse evident

channel straight - preferred crossing directly E of powerline.

riparian vegetation generally limited to main channel width - little extension into pasture.

Photo: 101-0250 (facing W)

SITE NO. 2006

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT S6066503 Lucas Energy DATE 31-8-08

SITE NO. 2007B LOCATION KP37 Black Camp Rd. NAME LdG / DR

AMG 56H EASTING 039636 NORTHING 6414300

DISTANCE and DIRECTION from TOWN: SITE IS 7km km (s) SSW (N. S. E. W.) OF Stroud Road. IN NSW (state)

WAS GPS USED? ☑ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☑ WGS 84 or GDA ALTITUDE 105m

GENERAL

☑ Remnant trees ☐ Regrowth ☐ Plantation

☑ Native grasses (trees / shrubs may be present)

☐ Non-native grasses (trees / shrubs may be present)

☐ Improved pasture ☐ Other

Habitat type open Eucalypt forest

RE ✓ VEG FA LANDFORM HSL

SOIL sandy clay

LANDSCAPE

Shape of patch?

☑ Circular / square ☐ Irregular ☐ Strip <50 m

☐ Strip >50 m

➡ Strip details: ☐ Creek / river ☐ Roadside ☐ Windbreak ☐ Other

Width

Area of full patch that contains 1 ha area:

☐ < 3 ha ☐ 3-10 ha ☐ 11-30 ha

☐ 31-100 ha ☐ 101-400 ha ☑ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

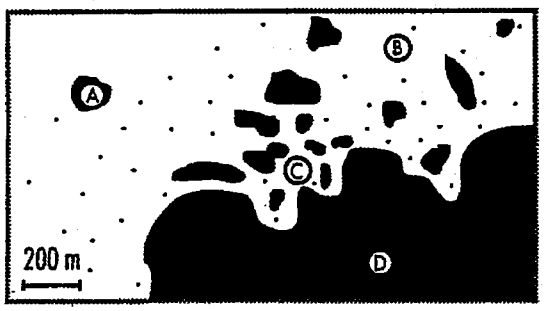
☑ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

☐ A- Isolated ☐ B-Semi isolated

☐ C-Not isolated ☑ D-Continuous tree / shrub

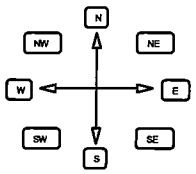
■ Continuous tree/shrub cover ⁘ Scattered trees ☐ Grassland



Is this 1 ha area on a:

☐ Flat ☐ Ridge ☐ Gully ☑ Slope

If slope, give aspect over 20 m



SSW

Degrees of slope over 20 m: 25°

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller that 3 m):

☐ Absent ☐ Sparse ☑ Open ☐ Dense

If trees present:

☐ single tree species

☑ two or three species

☐ more than three species

Are trees mostly?

☑ native ☐ exotic

Species: E. carnea① Corymbia citriodora① E. siderophyloia①

Average height of overstory?

☐ 3-5 m ☐ 5-10 m ☑ 10-15 m ☐ > 15 m

Are the trees?

☐ Even-aged (Trees mostly the same age or size)

☑ Multi-aged (Trees of varing size or age)

Are there obvious signs of dieback in the tree canopy?

☐ None ☑ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☑ two or three species

☐ more than three species

Are shrubs mostly?

☑ native ☐ exotic

Species: Melaleuca stypheloides Bursaria spinosa Allocasuarina torrulosa Jacksonia scaparia

Low shrub cover (0.5 m – 2 m):

☐ Absent ☐ Scattered ☑ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☐ two or three species

☑ more than three species

Are shrubs mostly?

☑ native ☐ exotic

Species: Bursaria spinosa Leucopogon juniperinus Acacia irrorata A. ulicifolia Pultenea sp.

Dominant ground cover within this 1 ha area:

☐ Tussocks ☐ Hummocks ☑ Continuous grass / herbs

☐ Low Heath ☐ Weeds ☑ Bare dirt / rocks / litter

LAND USE

Used for?

☐ Mixed grazing ☐ Sheep ☐ Cattle

☐ Crops Crop type

☐ Other Other remnant patch.

HLA

HABITAT ASSESSMENT (*cont.*)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☑ Abundant (>10)

If present, are they mostly? ☐ dead ☑ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☐ Scattered (1-10) ☐ Common (10-20) ☑ Abundant (> 20)

Fallen trees or branches present >50 cm diameter?

☐ Absent (0) ☑ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☐ Sparse ☑ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10–30 cm diameter?

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

Surface rocks of > 30 cm diameter?

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☑ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☑ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☐ Poor ☐ Average ☐ Good ☑ Excellent

Rock dependent fauna

☐ Absent ☑ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☐ Absent ☐ Poor ☑ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☐ Poor ☐ Average ☐ Good ☑ Excellent

OTHER HABITAT QUALITY ASPECTS:

red necked wallaby on approach from N
kookaburra, magpie, swallow
eastern yellow robin
potoroo diggings
scratchings not evident (some old marks)
heard frogs.

WETLANDS

Wetlands present?

☐ YES ☑ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)

☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh

☐ Tidal forest (e.g. mangrove) ☐ Lagoon

☐ Saline / brackish lake / swamp

INLAND WETLAND:

☐ Creek ➡ ☐ Dry ☐ Flowing

☐ River ☐ Floodplain, river flat

☐ Small billabong, pools (<8 ha) ☐ Freshwater lake (>8 ha)

☐ Shrubby swamp ☐ Wooded swamp

☐ Gilgai ☐ Claypan

☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank

☐ Irrigation channel, rice field ☐ Wastewater treatment

☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☐ < 2 ha ☐ 2-8 ha ☐ 8-100 ha ☐ >100 ha

➡ Water mostly

☐ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed

☐ Islands for birds to roost and nest

☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat

☐ Fencing to exclude grazing stock from direct access to the waters edge

☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Raining – heavy at times.
photo: 101-0252 (facing W)
vegetation more mature W than E
proposed pipeline within road reserve
large ironbarks + spotted gums present + preservation recommended (101-0254)
area susceptible to erosion + gullying (101-0253)
suggestion for pipeline E/uphill of current road reserve where vegetation is more juvenile/disturbed/thinned

SITE NO. 2007B

HLA

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT S6066503 Lucas Energy DATE 31-8-08

SITE NO. 2008 WS01 LOCATION KP29.2 Karuah River crossing NAME DR/LdG

AMG 56H EASTING 0398237 NORTHING 6422391

DISTANCE and DIRECTION from TOWN: SITE IS 1-82 km (s) NNW (N. S. E. W.) OF Stroud Road. IN NSW (state)

WAS GPS USED? ☑ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☑ WGS 84 or GDA ALTITUDE 42m

GENERAL

☑ Remnant trees ☐ Regrowth ☐ Plantation

☑ Native grasses (trees / shrubs may be present)

☑ Non-native grasses (trees / shrubs may be present)

☐ Improved pasture ☐ Other

Habitat type riparian remnant

RE — VEG MK LANDFORM STC

SOIL clay - sand

LANDSCAPE

Shape of patch?

☐ Circular / square ☐ Irregular ☐ Strip <50 m

☑ Strip >50 m

➡ Strip details: ☑ Creek / river ☐ Roadside ☐ Windbreak ☐ Other

Width 50m

Area of full patch that contains 1 ha area:

☐ < 3 ha ☑ 3-10 ha ☐ 11-30 ha ☐ 31-100 ha ☐ 101-400 ha ☐ > 400 ha

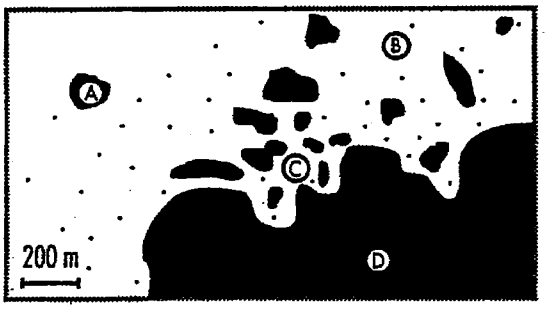
Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

☑ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

☐ A- Isolated ☐ B-Semi isolated ☐ C-Not isolated ☑ D-Continuous tree / shrub

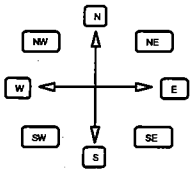
■ Continuous tree/shrub cover ⁘ Scattered trees ☐ Grassland



Is this 1 ha area on a:

☑ Flat ☐ Ridge ☐ Gully ☑ Slope watercourse

If slope, give aspect over 20 m



Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller that 3 m):

☐ Absent ☐ Sparse ☑ Open ☐ Dense

If trees present:

☐ single tree species

☑ two or three species

☐ more than three species

Are trees mostly?

☑ native ☐ exotic

Species: E. teriticornis① Syzgium sp. Casuarina cunninghamiana

Average height of overstory?

☐ 3-5 m ☐ 5-10 m ☐ 10-15 m ☑ > 15 m

Are the trees?

☐ Even-aged (Trees mostly the same age or size)

☑ Multi-aged (Trees of varing size or age)

Are there obvious signs of dieback in the tree canopy?

☐ None ☑ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☐ two or three species

☑ more than three species

Are shrubs mostly?

☑ native ☑ exotic

Species: Corkwood w. white flower *Peach Tristaniopsis laurina

Low shrub cover (0.5 m – 2 m):

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☐ two or three species

☑ more than three species

Are shrubs mostly?

☑ native ☐ exotic

Species: Acacia sp. Pittosporun sp. Ageratina sp. Elaeodendrum australi

Dominant ground cover within this 1 ha area:

☐ Tussocks ☐ Hummocks ☑ Continuous grass / herbs

☐ Low Heath ☐ Weeds ☑ Bare dirt / rocks / litter

LAND USE

Used for?

☐ Mixed grazing ☐ Sheep ☑ Cattle

☐ Crops Crop type

☐ Other Other

HLA

HABITAT ASSESSMENT (*cont.*)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☑ Abundant (>10)

If present, are they mostly? ☐ dead ☑ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☐ Scattered (1-10) ☐ Common (10-20) ☑ Abundant (> 20)

Fallen trees or branches present >50 cm diameter?

☑ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☑ Sparse ☐ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

Surface rocks of 10–30 cm diameter?

☐ Absent ☐ Scattered ☐ Common ☑ Abundant

Surface rocks of > 30 cm diameter?

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☐ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☑ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☐ Poor ☑ Average ☐ Good ☐ Excellent

Rock dependent fauna

☐ Absent ☑ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☐ Absent ☑ Poor ☐ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☐ Poor ☐ Average ☑ Good ☐ Excellent

OTHER HABITAT QUALITY ASPECTS: Lewings honeyeater
Austwood duck, En yellow robin, grey fantail, galah
access to NW bank + E. teriticornis not possible to search for scratchings
* likely platypus habitat

WETLANDS

Wetlands present?

☑ YES ☐ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)

☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh

☐ Tidal forest (e.g. mangrove) ☐ Lagoon

☐ Saline / brackish lake / swamp

INLAND WETLAND:

☐ Creek ➜ ☐ Dry ☑ Flowing

☑ River ☐ Floodplain, river flat

☐ Small billabong , pools (<8 ha) ☐ Freshwater lake (>8 ha)

☐ Shrubby swamp ☐ Wooded swamp

☐ Gilgai ☐ Claypan

☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank

☐ Irrigation channel, rice field ☐ Wastewater treatment

☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☐ < 2 ha ☑ 2-8 ha ☐ 8-100 ha ☐ >100 ha

➜ Water mostly

☑ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed

☐ Islands for birds to roost and nest

☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat

☑ Fencing to exclude grazing stock from direct access to the waters edge South (unknown on NW)

☑ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

high banks w. exposed sections + erosion evident
large trees (incl. E. teriticornis) within river channel + on upper banks

suggestion to utilize HDD to reduce habitat disturbance + bank erosion / collapse

photo: 101-0257 (facing NW)
101-0259 (facing NE)

assessment conducted from SE side of river

SITE NO. 2008 (WS01)

HLA

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT S6066503 Lucas Energy DATE 31-8-08

SITE NO. Z009 LOCATION KP25 Karuah River crossing NAME DR/LdG

AMG 56 H EASTING 0897412 NORTHING 6426415

DISTANCE and DIRECTION from TOWN: SITE IS 19.6 km (s) S (N. S. E. W.) OF Stratford. IN NSW (state)

WAS GPS USED? ☑ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☑ WGS 84 or GDA ALTITUDE 60m

GENERAL

☑ Remnant trees ☐ Regrowth ☐ Plantation

☐ Native grasses (trees / shrubs may be present)

☐ Non-native grasses (trees / shrubs may be present)

☐ Improved pasture ☐ Other

Habitat type riparian remnant

RE ~~[illegible]~~ VEG MK LANDFORM STC

SOIL Sandy clay

LANDSCAPE

Shape of patch?

☐ Circular / square ☐ Irregular ☑ Strip <50 m

☐ Strip >50 m

➡ Strip details: ☑ Creek / river ☐ Roadside

☐ Windbreak ☐ Other

Width 45m

Area of full patch that contains 1 ha area:

☐ < 3 ha ☑ 3-10 ha ☐ 11-30 ha

☐ 31-100 ha ☐ 101-400 ha ☐ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

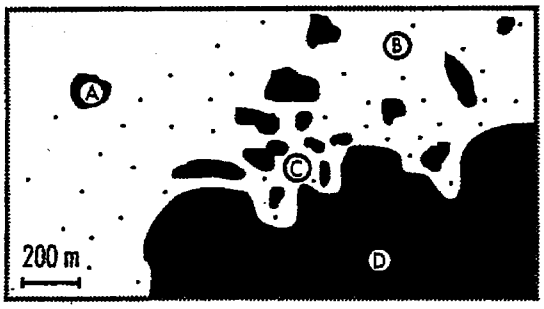
☑ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

☐ A- Isolated ☐ B-Semi isolated

☐ C-Not isolated ☑ D-Continuous tree / shrub

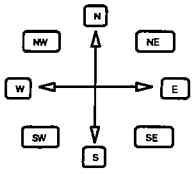
■ Continuous tree/shrub cover ⁘ Scattered trees ☐ Grassland



Is this 1 ha area on a:

☑ Flat ☐ Ridge ☐ Gully ☑ Slope waterhouse

If slope, give aspect over 20 m



Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller that 3 m):

☐ Absent ☐ Sparse ☑ Open ☐ Dense

If trees present:

☐ single tree species

☑ two or three species

☐ more than three species

Are trees mostly?

☑ native ☐ exotic

Species: E. tereticornis? Cassuarina cunninghamiana Syzygium sp.

Average height of overstory?

☐ 3-5 m ☐ 5-10 m ☑ 10-15 m ☐ > 15 m

Are the trees?

☐ Even-aged (Trees mostly the same age or size)

☑ Multi-aged (Trees of varing size or age)

Are there obvious signs of dieback in the tree canopy?

☐ None ☑ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

☐ Absent ☐ Scattered ☑ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☐ two or three species

☑ more than three species

Are shrubs mostly?

☑ native ☑ exotic

Species: Tristaniopsis laurina Melia Azedarach Laurel sp. Gossia sp. Melaleuca sp. *Peach *Solanum mauritianum

Low shrub cover (0.5 m – 2 m):

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

If shrubs present:

☑ single shrub species

☐ two or three species

☐ more than three species

Are shrubs mostly?

☐ native ☑ exotic

Species: *Ligustrum sinense

Dominant ground cover within this 1 ha area:

☐ Tussocks ☐ Hummocks ☐ Continuous grass / herbs

☐ Low Heath ☐ Weeds ☑ Bare dirt / rocks / litter

LAND USE

Used for?

☐ Mixed grazing ☐ Sheep ☑ Cattle

☐ Crops Crop type

☑ Other Other horses

HLA

HABITAT ASSESSMENT (*cont.*)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☑ Abundant (>10)

If present, are they mostly? ☐ dead ☑ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☐ Scattered (1-10) ☐ Common (10-20) ☑ Abundant (> 20)

Fallen trees or branches present >50 cm diameter?

☐ Absent (0) ☑ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☑ Sparse ☐ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10-30 cm diameter?

☐ Absent ☑ Scattered ☐ Common ☐ Abundant

Surface rocks of > 30 cm diameter?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☑ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☐ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☑ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☐ Poor ☑ Average ☐ Good ☐ Excellent

Rock dependent fauna

☑ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☐ Absent ☑ Poor ☐ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☐ Poor ☐ Average ☑ Good ☐ Excellent

OTHER HABITAT QUALITY ASPECTS:

*likely platypus habitat

king parrot, horses

WETLANDS

Wetlands present?

☑ YES ☐ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)

☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh

☐ Tidal forest (e.g. mangrove) ☐ Lagoon

☐ Saline / brackish lake / swamp

INLAND WETLAND:

☐ Creek ➡ ☐ Dry ☑ Flowing

☑ River ☐ Floodplain, river flat

☐ Small billabong , pools (<8 ha) ☐ Freshwater lake (>8 ha)

☐ Shrubby swamp ☐ Wooded swamp

☐ Gilgai ☐ Claypan

☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank

☐ Irrigation channel, rice field ☐ Wastewater treatment

☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☐ < 2 ha ☑ 2-8 ha ☐ 8-100 ha ☐ >100 ha

➡ Water mostly

☑ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed

☐ Islands for birds to roost and nest

☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat

☐ Fencing to exclude grazing stock from direct access to the waters edge

☑ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

several large E. leucoxylon in area

suggestion to utilise HDD to reduce habitat disturbance + bank erosion

assessment conducted from NE side of river

photo: 101-0264 (facing NW)

large log placed (+ secured w. chain) across river (photo: 101-0265)

SITE NO. 2009

HLA

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT 56066 503 Lucas Energy DATE 1/9/08

SITE NO. Z010 LOCATION KP 3.7 buffer. NAME L.G, D.R.

AMG 56 H EASTING 400873 NORTHING 6445498

DISTANCE and DIRECTION from TOWN: SITE IS 1 km km (s) ESE (N. S. E. W.) OF Stratford IN NSW (state)

WAS GPS USED? ☒ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☒ WGS 84 or (GDA) ALTITUDE 131.3m

GENERAL

☒ Remnant trees ☐ Regrowth ☐ Plantation

☒ Native grasses (trees / shrubs may be present)

☐ Non-native grasses (trees / shrubs may be present)

☐ Improved pasture ☐ Other

Habitat type Open eucalypt forest

RE — VEG FW LANDFORM PLA

SOIL loamy clay

LANDSCAPE

Shape of patch?

☒ Circular / square ☐ Irregular ☐ Strip <50 m

☐ Strip >50 m

➡ Strip details: ☐ Creek / river ☐ Roadside ☐ Windbreak ☐ Other

Width

Area of full patch that contains 1 ha area:

☐ < 3 ha ☐ 3-10 ha ☐ 11-30 ha

☒ 31-100 ha ☐ 101-400 ha ☐ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

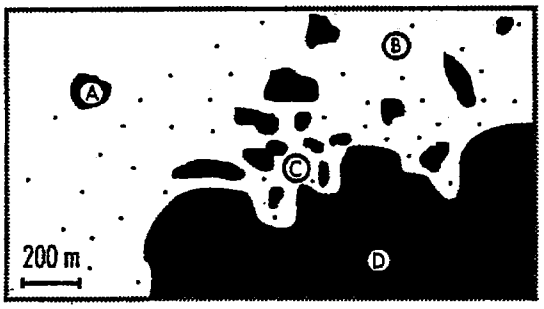
☒ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

☐ A- Isolated ☐ B-Semi isolated

☐ C-Not isolated ☒ D-Continuous tree / shrub

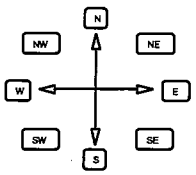
■ Continuous tree/shrub cover ⁘ Scattered trees ☐ Grassland



Is this 1 ha area on a:

☒ Flat ☐ Ridge ☐ Gully ☐ Slope

If slope, give aspect over 20 m



Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller that 3 m):

☐ Absent ☐ Sparse ☒ Open ☐ Dense

If trees present:

☐ single tree species

☐ two or three species

☒ more than three species

Are trees mostly?

☐ native ☐ exotic

Species: E. moluccana (1) E. camea / umbra (2) E. siderophoia (1)

Average height of overstory?

☐ 3-5 m ☐ 5-10 m ☐ 10-15 m ☒ > 15 m

Are the trees?

☐ Even-aged (Trees mostly the same age or size)

☒ Multi-aged (Trees of varing size or age)

Are there obvious signs of dieback in the tree canopy?

☐ None ☒ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

☐ Absent ☒ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☐ two or three species

☒ more than three species

Are shrubs mostly?

☒ native ☐ exotic

Species: Mel. sp. native cherry

Low shrub cover (0.5 m – 2 m):

☐ Absent ☒ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☐ two or three species

☒ more than three species

Are shrubs mostly?

☒ native ☐ exotic

Species: Bursaria spinosa Pultenaea Acacia ulicifolia

Dominant ground cover within this 1 ha area:

☐ Tussocks ☐ Hummocks ☒ Continuous grass / ~~herbs~~

☐ Low Heath ☐ Weeds ☒ ~~Bare dirt / rocks~~ / litter

LAND USE

Used for?

☐ Mixed grazing ☐ Sheep ☐ Cattle

☐ Crops Crop type

☐ Other Other

HLA

HABITAT ASSESSMENT (*cont.*)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0) ☒ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

If present, are they mostly? ☒ dead ☐ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☒ Scattered (1-10) ☐ Common (10-20) ☐ Abundant (> 20)

Fallen trees or branches present >50 cm diameter?

☒ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☐ Sparse ☒ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10–30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of > 30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☐ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☒ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☒ Poor ☐ Average ☐ Good ☐ Excellent

Rock dependent fauna

☒ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☐ Absent ☒ Poor ☒ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☐ Poor ☐ Average ☒ Good ☐ Excellent

OTHER HABITAT QUALITY ASPECTS:

Eastern grey kangaroo

White-throated treecreeper and Red-browed finch in greater area

WETLANDS

Wetlands present?

☐ YES ☒ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)

☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh

☐ Tidal forest (e.g. mangrove) ☐ Lagoon

☐ Saline / brackish lake / swamp

INLAND WETLAND:

☐ Creek ➡ ☐ Dry ☐ Flowing

☐ River ☐ Floodplain, river flat

☐ Small billabong , pools (<8 ha) ☐ Freshwater lake (>8 ha)

☐ Shrubby swamp ☐ Wooded swamp

☐ Gilgai ☐ Claypan

☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank

☐ Irrigation channel, rice field ☐ Wastewater treatment

☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☐ < 2 ha ☐ 2-8 ha ☐ 8-100 ha ☐ >100 ha

➡ Water mostly

☐ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed

☐ Islands for birds to roost and nest

☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat

☐ Fencing to exclude grazing stock from direct access to the waters edge

☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Scratches on few smooth-bark trees.

101-0266 photo South facing

Area cleared to the East where proposed pipe alignment is to be placed.

Area logged historically, no big trees in the area.

SITE NO. 2010

HLA

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT S6066503 Lucas Energy DATE 7/9/08

SITE NO. ZO11 LOCATION KP21 NAME L.G., D.R.

AMG 56 H EASTING 398407 NORTHING 6430147

DISTANCE and DIRECTION from TOWN: SITE IS 4.68 km (s) SSW (N. S. E. W.) OF Wards River IN NSW (state)

WAS GPS USED? ☒ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☒ WGS 84 or (GDA) ALTITUDE 134 m

GENERAL

☒ Remnant trees ☐ Regrowth ☐ Plantation

☒ Native grasses (trees / shrubs may be present)

☒ Non-native grasses (trees / shrubs may be present)

☐ Improved pasture ☐ Other

Habitat type Open Eucalypt forest

RE — VEG FW LANDFORM HSL

SOIL loamy clay

LANDSCAPE

Shape of patch?

☐ Circular / square ☒ Irregular ☐ Strip <50 m

☐ Strip >50 m

➡ Strip details: ☐ Creek / river ☐ Roadside ☐ Windbreak ☐ Other

Width

Area of full patch that contains 1 ha area:

☐ < 3 ha ☐ 3-10 ha ☒ 11-30 ha

☒ 31-100 ha ☐ 101-400 ha ☐ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

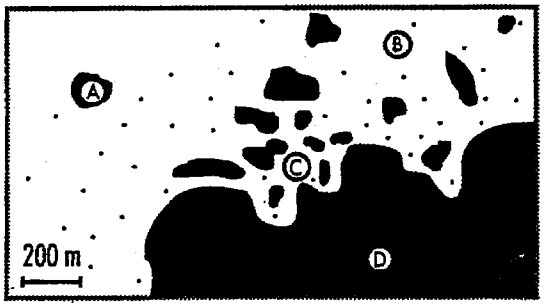
☒ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

☐ A- Isolated ☐ B-Semi isolated

☐ C-Not isolated ☒ D-Continuous tree / shrub

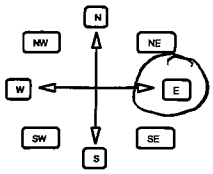
■ Continuous tree/shrub cover ⁘ Scattered trees ☐ Grassland



Is this 1 ha area on a:

☐ Flat ☐ Ridge ☐ Gully ☒ Slope

If slope, give aspect over 20 m



Degrees of slope over 20 m: 5-10°

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller that 3 m):

☐ Absent ☐ Sparse ☒ Open ☐ Dense

If trees present:

☐ single tree species

☐ two or three species

☒ more than three species

Are trees mostly?

☒ native ☐ exotic

Species: E. propinqua (1) E. punctata (2) E. siderophloia (1) C. citriodora (ovulata) (1)

Average height of overstory?

☐ 3-5 m ☐ 5-10 m ☒ 10-15 m ☒ > 15 m

Are the trees?

☐ Even-aged (Trees mostly the same age or size)

☒ Multi-aged (Trees of varing size or age)

Are there obvious signs of dieback in the tree canopy?

☐ None ☒ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

☐ Absent ☒ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☒ two or three species

☐ more than three species

Are shrubs mostly?

☒ native ☐ exotic

Species: Lantana Saplings

Low shrub cover (0.5 m – 2 m):

☐ Absent ☒ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☒ two or three species

☐ more than three species

Are shrubs mostly?

☒ native ☒ exotic

Species: Lantana E. cupressiformes

Dominant ground cover within this 1 ha area:

☐ Tussocks ☐ Hummocks ☒ Continuous grass / ~~herbs~~

☐ Low Heath ☐ Weeds ☐ ~~Bare dirt / rocks~~ / litter

LAND USE

Used for?

☐ Mixed grazing ☐ Sheep ☒ Cattle

☐ Crops Crop type

☐ Other Other

HLA

HABITAT ASSESSMENT (*cont.*)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0) ☒ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

If present, are they mostly? ☐ dead ☒ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☒ Scattered (1-10) ☐ Common (10-20) ☐ Abundant (> 20)

Fallen trees or branches present >50 cm diameter?

☒ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☐ Sparse ☒ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10–30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of > 30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☐ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☒ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☒ Poor ☐ Average ☐ Good ☐ Excellent

Rock dependent fauna

☒ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☐ Absent ☐ Poor ☒ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☐ Poor ☐ Average ☒ Good ☐ Excellent

OTHER HABITAT QUALITY ASPECTS:

Kukaburra

Little tree scratchings (not recent)

WETLANDS

Wetlands present?

☐ YES ☒ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)

☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh

☐ Tidal forest (e.g. mangrove) ☐ Lagoon

☐ Saline / brackish lake / swamp

INLAND WETLAND:

☐ Creek ➡ ☐ Dry ☐ Flowing

☐ River ☐ Floodplain, river flat

☐ Small billabong , pools (<8 ha) ☐ Freshwater lake (>8 ha)

☐ Shrubby swamp ☐ Wooded swamp

☐ Gilgai ☐ Claypan

☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank

☐ Irrigation channel, rice field ☐ Wastewater treatment

☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☐ < 2 ha ☐ 2-8 ha ☐ 8-100 ha ☐ >100 ha

➡ Water mostly

☐ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed

☐ Islands for birds to roost and nest

☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat

☐ Fencing to exclude grazing stock from direct access to the waters edge

☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

+ regrowth

Remnant forest at both sides of powerline.
Approx 10m space between powerline (West) and forest.
Area historically logged with few large trees which should be kept.
101-0271 photo West

SITE NO. 2011

HLA

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT: 56066503 Lucas Energy DATE: 1/9/08

SITE NO.: Z012 LOCATION: KP49.5 Black Camp Rd pinch. NAME: L.G, D.R.

AMG: 5 6 H EASTING: 3 9 1 3 5 2 NORTHING: 6 4 0 7 9 4 8

DISTANCE and DIRECTION from TOWN: SITE IS 12km km (s) SE (N. S. E. W.) OF Dungog IN NSW (state)

WAS GPS USED? [x] YES [ ] NO IF YES, WHICH DATUM WAS USED? [ ] Aust (84/66) [x] WGS 84 or GDA (circled) ALTITUDE: 53m

GENERAL

[x] Remnant trees [ ] Regrowth [ ] Plantation

[x] Native grasses (trees / shrubs may be present)

[ ] Non-native grasses (trees / shrubs may be present)

[ ] Improved pasture [ ] Other

Habitat type: Open eucalypt forest

RE: — VEG: FW LANDFORM: PLA

SOIL: loamy

LANDSCAPE

Shape of patch?

[x] Circular / square [ ] Irregular [ ] Strip <50 m

[ ] Strip >50 m

Strip details: [ ] Creek / river [ ] Roadside [ ] Windbreak [ ] Other

Width:

Area of full patch that contains 1 ha area:

[ ] < 3 ha [ ] 3-10 ha [x] 11-30 ha

[ ] 31-100 ha [ ] 101-400 ha [ ] > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

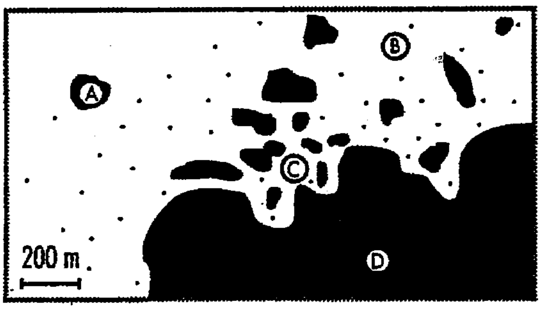
[x] YES [ ] NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

[ ] A- Isolated [ ] B-Semi isolated

[ ] C-Not isolated [x] D-Continuous tree / shrub

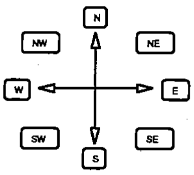
Continuous tree/shrub cover Scattered trees Grassland



Is this 1 ha area on a:

[x] Flat [ ] Ridge [ ] Gully [ ] Slope

If slope, give aspect over 20 m



Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller that 3 m):

[ ] Absent [ ] Sparse [x] Open [ ] Dense

If trees present:

[ ] single tree species

[ ] two or three species

[x] more than three species

Are trees mostly? [x] native [ ] exotic

Species: E. siderophloia (1) C. maculata (1) E. carnea/umbra (2) C. citriodora (1)

Average height of overstory?

[ ] 3-5 m [ ] 5-10 m [x] 10-15 m [ ] > 15 m

Are the trees?

[ ] Even-aged (Trees mostly the same age or size)

[x] Multi-aged (Trees of varing size or age)

Are there obvious signs of dieback in the tree canopy?

[ ] None [x] Some dieback [ ] Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

[ ] Absent [ ] Scattered [x] Common [ ] Abundant

If shrubs present:

[ ] single shrub species

[ ] two or three species

[x] more than three species

Are shrubs mostly? [x] native [ ] exotic

Species: M. nodosa, Comesperma sp., Acacia irrorata

Low shrub cover (0.5 m – 2 m):

[ ] Absent [x] Scattered [ ] Common [ ] Abundant

If shrubs present:

[ ] single shrub species

[ ] two or three species

[x] more than three species

Are shrubs mostly? [x] native [ ] exotic

Species: Acacia ulicifolia, Pultenea sp., Exocarpus cupressiformis

Dominant ground cover within this 1 ha area:

[ ] Tussocks [ ] Hummocks [x] Continuous grass / ~~herbs~~

[ ] Low Heath [ ] Weeds [x] ~~Bare dirt / rocks~~ / litter

LAND USE

Used for?

[ ] Mixed grazing [ ] Sheep [x] Cattle (around)

[ ] Crops Crop type:

[ ] Other Other:

HLA

HABITAT ASSESSMENT (*cont.*)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0) ☒ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

If present, are they mostly? ☐ dead ☒ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☒ Scattered (1-10) ☐ Common (10-20) ☐ Abundant (> 20)

Fallen trees or branches present >50 cm diameter?

☒ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☐ Sparse ☒ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10–30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of > 30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☐ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☒ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☒ Poor ☐ Average ☐ Good ☐ Excellent

Rock dependent fauna

☒ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☐ Absent ☒ Poor ☒ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☐ Poor ☐ Average ☒ Good ☐ Excellent

OTHER HABITAT QUALITY ASPECTS:

spotted turtle dove.

3:38

WETLANDS

Wetlands present?

☐ YES ☒ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)

☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh

☐ Tidal forest (e.g. mangrove) ☐ Lagoon

☐ Saline / brackish lake / swamp

INLAND WETLAND:

☐ Creek ➡ ☐ Dry ☐ Flowing

☐ River ☐ Floodplain, river flat

☐ Small billabong , pools (<8 ha) ☐ Freshwater lake (>8 ha)

☐ Shrubby swamp ☐ Wooded swamp

☐ Gilgai ☐ Claypan

☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank

☐ Irrigation channel, rice field ☐ Wastewater treatment

☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☐ < 2 ha ☐ 2-8 ha ☐ 8-100 ha ☐ >100 ha

➡ Water mostly

☐ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed

☐ Islands for birds to roost and nest

☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat

☐ Fencing to exclude grazing stock from direct access to the waters edge

☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Remnant patch close to the creek. Approximately 20 m from remnant patch to the creek. Some regrowth in between that could be removed. Allow buffer between trench and creek.

SITE NO. 2012

HLA

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT 56066503 Lucas Energy DATE 2/9/08

SITE NO. 2013 BCR3 LOCATION KP40 Block Camp Road NAME L.G. D.R.

AMG 56H EASTING 396061 NORTHING 6412313

DISTANCE and DIRECTION from TOWN: SITE IS 10km km (s) SSW (N. S. E. W.) OF Stroud Road. IN NSW (state)

WAS GPS USED? ☑ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☒ WGS 84 or (GDA) ALTITUDE 193.2m

GENERAL

☒ Remnant trees ☐ Regrowth ☐ Plantation

☒ Native grasses (trees / shrubs may be present)

☐ Non-native grasses (trees / shrubs may be present)

☐ Improved pasture ☐ Other

Habitat type Open eucalypt forest

RE — VEG FW LANDFORM HSL

SOIL Clay

LANDSCAPE

Shape of patch?

☒ Circular / square ☐ Irregular ☐ Strip <50 m

☐ Strip >50 m

➡ Strip details: ☐ Creek / river ☐ Roadside ☐ Windbreak ☐ Other

Width

Area of full patch that contains 1 ha area:

☐ < 3 ha ☐ 3-10 ha ☐ 11-30 ha

☐ 31-100 ha ☐ 101-400 ha ☒ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

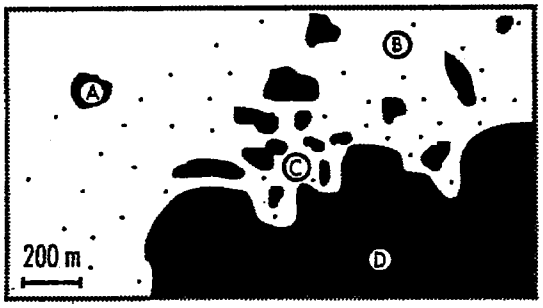
☑ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

☐ A- Isolated ☐ B-Semi isolated

☐ C-Not isolated ☒ D-Continuous tree / shrub

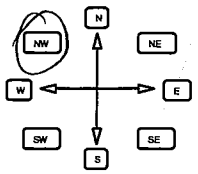
■ Continuous tree/shrub cover ⁘ Scattered trees ☐ Grassland



Is this 1 ha area on a:

☐ Flat ☒ Ridge ☐ Gully ☐ Slope

If slope, give aspect over 20 m



Degrees of slope over 20 m: 40-45°

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller that 3 m):

☐ Absent ☐ Sparse ☒ Open ☐ Dense

If trees present:

☐ single tree species

☐ two or three species

☒ more than three species

Are trees mostly?

☒ native ☐ exotic

Species: C. citriodora ① E. propinqua ① E. carnei/umbra ② E. microneys ① A. torulosa

Average height of overstory?

☐ 3-5 m ☐ 5-10 m ☒ 10-15 m ☐ > 15 m

Are the trees?

☐ Even-aged (Trees mostly the same age or size)

☒ Multi-aged (Trees of varing size or age)

Are there obvious signs of dieback in the tree canopy?

☐ None ☒ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

☐ Absent ☒ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☒ two or three species

☐ more than three species

Are shrubs mostly?

☒ native ☐ exotic

Species: A. irrorata

L. polygalifolia

Low shrub cover (0.5 m – 2 m):

☐ Absent ☒ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☒ two or three species

☐ more than three species

Are shrubs mostly?

☒ native ☐ exotic

Species: O. illicifolium

A. ulicifolia

Dominant ground cover within this 1 ha area:

☒ Tussocks ☐ Hummocks ☐ Continuous grass / herbs

☐ Low Heath ☐ Weeds ☒ Bare dirt / rocks / litter

LAND USE

Used for?

☐ Mixed grazing ☐ Sheep ☐ Cattle

☐ Crops Crop type

☒ Other Other

HLA

HABITAT ASSESSMENT (*cont.*)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0) ☐ Scattered (1-5) ☑ Common (6-10) ☐ Abundant (>10)

If present, are they mostly? ☐ dead ☒ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☐ Scattered (1-10) ☒ Common (10-20) ☐ Abundant (> 20)

Fallen trees or branches present >50 cm diameter?

☐ Absent (0) ☒ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☒ Sparse ☐ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10–30 cm diameter?

☐ Absent ☒ Scattered ☐ Common ☐ Abundant

Surface rocks of > 30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☒ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☒ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☒ Poor ☐ Average ☐ Good ☐ Excellent

Rock dependent fauna

☒ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☐ Absent ☐ Poor ☒ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☐ Poor ☐ Average ☒ Good ☐ Excellent

OTHER HABITAT QUALITY ASPECTS:

WETLANDS

Wetlands present?

☐ YES ☒ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)

☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh

☐ Tidal forest (e.g. mangrove) ☐ Lagoon

☐ Saline / brackish lake / swamp

INLAND WETLAND:

☐ Creek ➡ ☐ Dry ☐ Flowing

☐ River ☐ Floodplain, river flat

☐ Small billabong , pools (<8 ha) ☐ Freshwater lake (>8 ha)

☐ Shrubby swamp ☐ Wooded swamp

☐ Gilgai ☐ Claypan

☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank

☐ Irrigation channel, rice field ☐ Wastewater treatment

☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☐ < 2 ha ☐ 2-8 ha ☐ 8-100 ha ☐ >100 ha

➡ Water mostly

☐ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed

☐ Islands for birds to roost and nest

☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat

☐ Fencing to exclude grazing stock from direct access to the waters edge

☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Historical logging.

Vegetation is consistent over the whole area. Slope gets steeper towards the gully

Photo 101-0275 SW aspect

(BCR3)

SITE NO. 2013

HLA

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT S6066503 Lucas energy DATE 2/9/08

SITE NO. 20146 BCRD LOCATION KP41 Black Camp Road NAME L.G., D.R.

AMG 56H EASTING 395208 NORTHING 6411579

DISTANCE and DIRECTION from TOWN: SITE IS 11 km km (s) SSW (N. S. E. W.) OF Stroud Road IN NSW (state)

WAS GPS USED? ☑ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☒ WGS 84 or GDA ALTITUDE 79m

GENERAL

☒ Remnant trees ☒ Regrowth ☐ Plantation

☒ Native grasses (trees / shrubs may be present)

☒ Non-native grasses (trees / shrubs may be present)

☐ Improved pasture ☐ Other

Habitat type Open eucalypt forest

RE — VEG FW LANDFORM F00

SOIL Sandy Clay

LANDSCAPE

Shape of patch?

☒ Circular / square ☐ Irregular ☐ Strip <50 m

☐ Strip >50 m

➡ Strip details: ☐ Creek / river ☐ Roadside ☐ Windbreak ☐ Other

Width

Area of full patch that contains 1 ha area:

☐ < 3 ha ☐ 3-10 ha ☐ 11-30 ha

☐ 31-100 ha ☐ 101-400 ha ☒ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

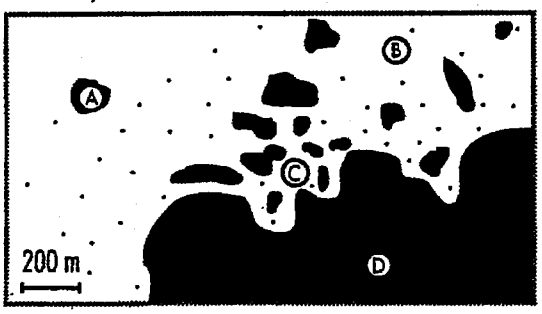
☒ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

☐ A- Isolated ☐ B-Semi isolated

☐ C-Not isolated ☒ D-Continuous tree / shrub

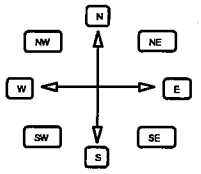
■ Continuous tree/shrub cover ⁘ Scattered trees ☐ Grassland



Is this 1 ha area on a:

☒ Flat ☐ Ridge ☒ Gully ☐ Slope

If slope, give aspect over 20 m



Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller that 3 m):

☐ Absent ☐ Sparse ☒ Open ☐ Dense

If trees present:

☐ single tree species

☐ two or three species

☒ more than three species

Are trees mostly?

☒ native ☐ exotic

Species: E. propinqua (Gray gum) E. maculosa (T) E. microcorys (T) (Tallowwood) E. tereticornis (T)

Average height of overstory?

☐ 3-5 m ☐ 5-10 m ☐ 10-15 m ☒ > 15 m

Are the trees?

☐ Even-aged (Trees mostly the same age or size)

☒ Multi-aged (Trees of varing size or age)

Are there obvious signs of dieback in the tree canopy?

☐ None ☒ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

☐ Absent ☒ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☐ two or three species

☒ more than three species

Are shrubs mostly?

☒ native ☐ exotic

Species: Acacia sp. Ficus coronata A. excelsa Diospyros australis

Low shrub cover (0.5 m – 2 m):

☐ Absent ☒ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☐ two or three species

☒ more than three species

Are shrubs mostly?

☒ native ☐ exotic

Species: Melastoma malabathricum A. marata Hibiscus sp. Commersonia

Dominant ground cover within this 1 ha area:

☒ Tussocks ☐ Hummocks ☒ Continuous grass / ~~herbs~~

☐ Low Heath ☐ Weeds ☒ ~~Bare dirt / rocks~~ / litter

LAND USE

Used for?

☐ Mixed grazing ☐ Sheep ☐ Cattle

☐ Crops Crop type

☐ Other Other

HLA

HABITAT ASSESSMENT (*cont.*)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0) ☐ Scattered (1-5) ☒ Common (6-10) ☐ Abundant (>10)

If present, are they mostly? ☐ dead ☒ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☐ Scattered (1-10) ☐ Common (10-20) ☒ Abundant (> 20)

Fallen trees or branches present >50 cm diameter?

☐ Absent (0) ☒ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☐ Sparse ☐ Patchy ☒ Dense

Mistletoe within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10–30 cm diameter?

☐ Absent ☒ Scattered ☐ Common ☐ Abundant

Surface rocks of > 30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☒ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☒ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☐ Poor ☒ Average ☐ Good ☐ Excellent

Rock dependent fauna

☒ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☐ Absent ☐ Poor ☐ Average ☒ Good ☐ Excellent

Small birds

☐ Absent ☐ Poor ☐ Average ☒ Good ☒ Excellent

OTHER HABITAT QUALITY ASPECTS:

Almost the beginning of a corridor. Area of high importance for fauna travel and migration.
rednecked wallaby, grey crowned babbler

WETLANDS

Wetlands present?

☒ YES ☐ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)

☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh

☐ Tidal forest (e.g. mangrove) ☐ Lagoon

☐ Saline / brackish lake / swamp

INLAND WETLAND:

☒ Creek ➡ ☐ Dry ☒ Flowing

☐ River ☐ Floodplain, river flat

☐ Small billabong , pools (<8 ha) ☐ Freshwater lake (>8 ha)

☐ Shrubby swamp ☐ Wooded swamp

☐ Gilgai ☐ Claypan

☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank

☐ Irrigation channel, rice field ☐ Wastewater treatment

☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☒ < 2 ha ☐ 2-8 ha ☐ 8-100 ha ☐ >100 ha

➡ Water mostly

☒ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT small creek

☐ Broad, shallow, swampy areas for birds to feed

☐ Islands for birds to roost and nest

☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat

☐ Fencing to exclude grazing stock from direct access to the waters edge

☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Remnant patch 5-10 m from creek and powerlines. Steep short bank, pipeline best suited on left of road from S-N view.
Semi-cleared forest on left.
Sightings on grey gums.
Photo 101-0267 NE, creek side.

(BCRO)

SITE NO. 2014B

HLA

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT S6066 503 Lucas Energy DATE 3/9/09

SITE NO. 2015 LOCATION KP56.5 (Smith) NAME LG, DR

AMG 56H EASTING 390394 NORTHING 6401435

DISTANCE and DIRECTION from TOWN: SITE IS 9km km (s) NE (N. S. E. W.) OF Clarence Town. IN NSW (state)

WAS GPS USED? ☒ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☒ WGS 84 or GDA ALTITUDE 72 m

GENERAL

☒ Remnant trees ☒ Regrowth ☐ Plantation

☒ Native grasses (trees / shrubs may be present)

☒ Non-native grasses (trees / shrubs may be present)

☐ Improved pasture ☐ Other

Habitat type

RE — VEG MK LANDFORM Gul

SOIL clay silt

LANDSCAPE

Shape of patch?

☐ Circular / square ☐ Irregular ☒ Strip <50 m

☐ Strip >50 m

➡ Strip details: ☒ Creek / river ☐ Roadside

☐ Windbreak ☐ Other

Width ~50

Area of full patch that contains 1 ha area:

☐ < 3 ha ☒ 3-10 ha ☐ 11-30 ha

☐ 31-100 ha ☐ 101-400 ha ☐ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

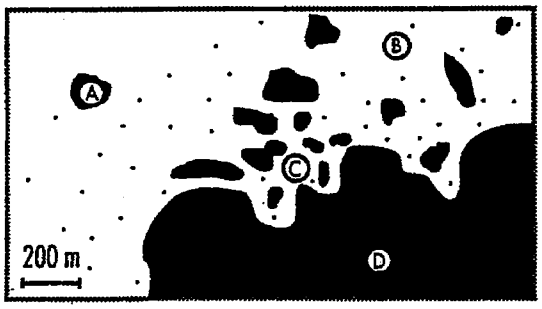
☒ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

☐ A- Isolated ☐ B-Semi isolated

☐ C-Not isolated ☒ D-Continuous tree / shrub

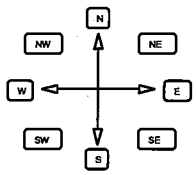
■ Continuous tree/shrub cover ⁘ Scattered trees ☐ Grassland



Is this 1 ha area on a:

☐ Flat ☐ Ridge ☒ Gully ☐ Slope

If slope, give aspect over 20 m



Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller that 3 m):

☐ Absent ☐ Sparse ☒ Open ☒ Dense

If trees present:

☐ single tree species

☒ two or three species

☐ more than three species

Are trees mostly?

☒ native ☐ exotic

Species: Cassia sp. Syzygium sp. Hibiscus sp.

Average height of overstory?

☐ 3-5 m ☒ 5-10 m ☐ 10-15 m ☐ > 15 m

Are the trees?

☐ Even-aged (Trees mostly the same age or size)

☒ Multi-aged (Trees of varing size or age)

Are there obvious signs of dieback in the tree canopy?

☐ None ☒ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

☐ Absent ☐ Scattered ☒ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☒ two or three species

☐ more than three species

Are shrubs mostly?

☒ native ☒ exotic

Species: Saplings Melotis sp. lantana

Low shrub cover (0.5 m – 2 m):

☐ Absent ☒ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☒ two or three species

☐ more than three species

Are shrubs mostly?

☒ native ☒ exotic

Species: Notelaea Rubus sp. Pittosporum Bursaria spinosa

Dominant ground cover within this 1 ha area:

☒ Tussocks ☐ Hummocks ☐ Continuous grass / herbs

☐ Low Heath ☐ Weeds ☐ Bare dirt / rocks / litter

LAND USE

Used for?

☐ Mixed grazing ☐ Sheep ☒ Cattle

☐ Crops Crop type

☐ Other Other

HLA

HABITAT ASSESSMENT (*cont.*)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0) ☒ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

If present, are they mostly? ☐ dead ☐ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☒ Scattered (1-10) ☐ Common (10-20) ☐ Abundant (> 20)

Fallen trees or branches present >50 cm diameter?

☒ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☒ Sparse ☒ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☐ Absent ☒ Scattered ☐ Common ☐ Abundant

Surface rocks of 10–30 cm diameter?

☐ Absent ☐ Scattered ☒ Common ☐ Abundant

Surface rocks of > 30 cm diameter?

☐ Absent ☒ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☒ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☒ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☒ Poor ☐ Average ☐ Good ☐ Excellent

Rock dependent fauna

☐ Absent ☒ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☐ Absent ☒ Poor ☐ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☐ Poor ☐ Average ☒ Good ☒ Excellent

OTHER HABITAT QUALITY ASPECTS:

2 Rabbits

WETLANDS

Wetlands present?

☒ YES ☐ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)

☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh

☐ Tidal forest (e.g. mangrove) ☐ Lagoon

☐ Saline / brackish lake / swamp

INLAND WETLAND:

☒ Creek ➡ ☒ Dry ☐ Flowing

☐ River ☐ Floodplain, river flat

☐ Small billabong , pools (<8 ha) ☐ Freshwater lake (>8 ha)

☐ Shrubby swamp ☐ Wooded swamp

☐ Gilgai ☐ Claypan

☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank

☐ Irrigation channel, rice field ☐ Wastewater treatment

☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☒ < 2 ha ☐ 2-8 ha ☐ 8-100 ha ☐ >100 ha

➡ Water mostly

☒ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed

☐ Islands for birds to roost and nest

☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat

☐ Fencing to exclude grazing stock from direct access to the waters edge

☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Gully with cattle pastures at both side.

Recognized corridor in the area.

Photo: 101-0281 & 101-0282 (facing SE)

SITE NO. 2015

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT S6066503 Lucas Energy DATE 3/9/08

SITE NO. ZO16 LOCATION KP61.5 Reserve. NAME L.G, D.R.

AMG 56H EASTING 389909 NORTHING 6396441

DISTANCE and DIRECTION from TOWN: SITE IS 19.3 km (s) S, SE (N. S. E. W.) OF Dungog IN NSW (state)

WAS GPS USED? ☒ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☒ WGS 84 or GDA ALTITUDE 49 m

GENERAL

☒ Remnant trees ☒ Regrowth ☐ Plantation

☒ Native grasses (trees / shrubs may be present)

☐ Non-native grasses (trees / shrubs may be present)

☐ Improved pasture ☐ Other

Habitat type Open Eucalypt forest

RE ✓ VEG FW LANDFORM PLA

SOIL Sandy loam

LANDSCAPE

Shape of patch?

☒ Circular / square ☐ Irregular ☐ Strip <50 m

☐ Strip >50 m

Strip details: ☐ Creek / river ☐ Roadside ☐ Windbreak ☐ Other

Width

Area of full patch that contains 1 ha area:

☐ < 3 ha ☐ 3-10 ha ☐ 11-30 ha

☒ 31-100 ha ☐ 101-400 ha ☐ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

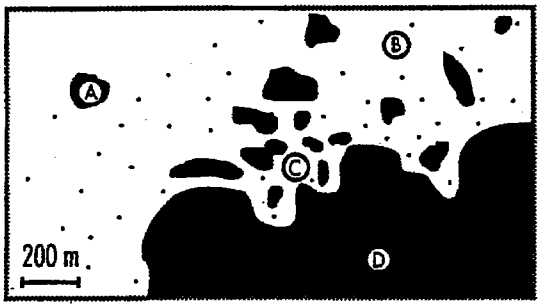
☒ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

☐ A- Isolated ☐ B-Semi isolated

☐ C-Not isolated ☒ D-Continuous tree / shrub

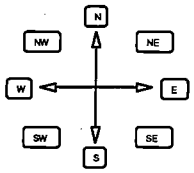
■ Continuous tree/shrub cover ⁘ Scattered trees ☐ Grassland



Is this 1 ha area on a:

☒ Flat ☐ Ridge ☐ Gully ☐ Slope

If slope, give aspect over 20 m



Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller that 3 m):

☐ Absent ☐ Sparse ☒ Open ☐ Dense

If trees present:

☐ single tree species

☒ two or three species

☐ more than three species

Are trees mostly?

☒ native ☐ exotic

Species: Eucalyptus citriodora ① E. sideroxylon ① E. umbra ②

Average height of overstory?

☐ 3-5 m ☐ 5-10 m ☒ 10-15 m ☐ > 15 m

Are the trees?

☐ Even-aged (Trees mostly the same age or size)

☒ Multi-aged (Trees of varing size or age)

Are there obvious signs of dieback in the tree canopy?

☐ None ☒ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

☐ Absent ☐ Scattered ☐ Common ☒ Abundant

If shrubs present:

☐ single shrub species

☒ two or three species

☐ more than three species

Are shrubs mostly?

☒ native ☐ exotic

Species: Melaluca nodosa Banksia spinosa Leptospermum sp.

Low shrub cover (0.5 m – 2 m):

☐ Absent ☐ Scattered ☒ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☒ two or three species

☐ more than three species

Are shrubs mostly?

☒ native ☐ exotic

Species: Acacia ulicifolia Leucopogam Pultenea sp.

Dominant ground cover within this 1 ha area:

☒ Tussocks ☐ Hummocks ☐ Continuous grass / herbs

☐ Low Heath ☐ Weeds ☐ Bare dirt / rocks / litter

LAND USE

Used for?

☐ Mixed grazing ☐ Sheep ☐ Cattle

☐ Crops Crop type

☒ Other Other Remnant conservation

HLA

HABITAT ASSESSMENT (*cont.*)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☒ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

If present, are they mostly? ☐ dead ☐ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☒ Scattered (1-10) ☐ Common (10-20) ☐ Abundant (> 20)

Fallen trees or branches present >50 cm diameter?

☒ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☐ Sparse ☒ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10–30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of > 30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☐ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☒ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☒ Poor ☐ Average ☐ Good ☐ Excellent

Rock dependent fauna

☒ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☒ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☐ Poor ☐ Average ☒ Good ☐ Excellent

OTHER HABITAT QUALITY ASPECTS:

Young remnant forest

WETLANDS

Wetlands present?

☐ YES ☒ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)

☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh

☐ Tidal forest (e.g. mangrove) ☐ Lagoon

☐ Saline / brackish lake / swamp

INLAND WETLAND:

☐ Creek ➡ ☐ Dry ☐ Flowing

☐ River ☐ Floodplain, river flat

☐ Small billabong , pools (<8 ha) ☐ Freshwater lake (>8 ha)

☐ Shrubby swamp ☐ Wooded swamp

☐ Gilgai ☐ Claypan

☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank

☐ Irrigation channel, rice field ☐ Wastewater treatment

☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☐ < 2 ha ☐ 2-8 ha ☐ 8-100 ha ☐ >100 ha

➡ Water mostly

☐ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed

☐ Islands for birds to roost and nest

☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat

☐ Fencing to exclude grazing stock from direct access to the waters edge

☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Remnant forest very isolated.
Conservation reserve.

Photos:
101-0283 SE
101-0284

SITE NO. 2016.

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT 56066 503 Lucas Energy DATE 3/9/08

SITE NO. Z017 LOCATION KP65.4 powerline easement NAME L6, DR

AMG 56H EASTING 387509 NORTHING 6393733

DISTANCE and DIRECTION from TOWN: SITE IS 1.2km km (s) E (N. S. E. W.) OF Clarence Town IN NSW (state)

WAS GPS USED? ☒ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☒ WGS 84 or GDA ALTITUDE 36 m

GENERAL

☒ Remnant trees ☐ Regrowth ☐ Plantation

☒ Native grasses (trees / shrubs may be present)

☐ Non-native grasses (trees / shrubs may be present)

☐ Improved pasture ☐ Other

Habitat type Open eucalypt forest

RE — VEG FW LANDFORM PLA

SOIL Sandy Clay

LANDSCAPE

Shape of patch?

☒ Circular / square ☐ Irregular ☐ Strip <50 m

☐ Strip >50 m

➡ Strip details: ☐ Creek / river ☐ Roadside ☐ Windbreak ☐ Other

Width

Area of full patch that contains 1 ha area:

☐ < 3 ha ☐ 3-10 ha ☐ 11-30 ha

☐ 31-100 ha ☐ 101-400 ha ☒ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

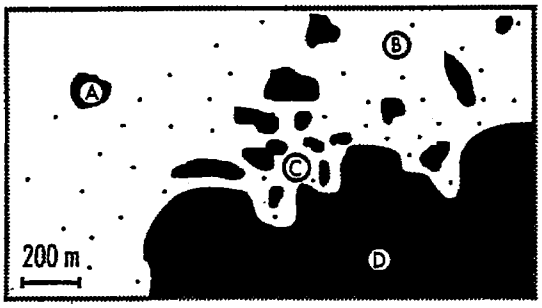
☒ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

☐ A- Isolated ☐ B-Semi isolated

☐ C-Not isolated ☒ D-Continuous tree / shrub

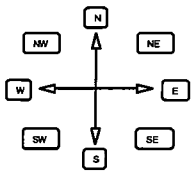
■ Continuous tree/shrub cover ⁘ Scattered trees ☐ Grassland



Is this 1 ha area on a:

☒ Flat ☐ Ridge ☐ Gully ☐ Slope

If slope, give aspect over 20 m



Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller that 3 m):

☐ Absent ☐ Sparse ☒ Open ☐ Dense

If trees present:

☐ single tree species

☒ two or three species

☐ more than three species

Are trees mostly?

☒ native ☐ exotic

Species: E. sideroxylon ①
C. intermedia ①

Average height of overstory?

☐ 3-5 m ☐ 5-10 m ☒ 10-15 m ☐ > 15 m

Are the trees?

☐ Even-aged (Trees mostly the same age or size)

☒ Multi-aged (Trees of varing size or age)

Are there obvious signs of dieback in the tree canopy?

☐ None ☒ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

☐ Absent ☒ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☒ two or three species

☐ more than three species

Are shrubs mostly?

☒ native ☐ exotic

Species: E. superciformis
Leptospermum sp.

Low shrub cover (0.5 m – 2 m):

☐ Absent ☐ Scattered ☒ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☒ two or three species

☐ more than three species

Are shrubs mostly?

☒ native ☐ exotic

Species: Xanthorrhoea sp.
Pultenaea sp.

Dominant ground cover within this 1 ha area:

☒ Tussocks ☐ Hummocks ☐ Continuous grass / herbs

☐ Low Heath ☐ Weeds ☐ Bare dirt / rocks / litter

LAND USE

Used for?

☐ Mixed grazing ☐ Sheep ☐ Cattle

☐ Crops Crop type

☒ Other Other Remnant w Powerline Corridor

HLA

HABITAT ASSESSMENT (*cont.*)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0) ☒ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

If present, are they mostly? ☐ dead ☐ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☒ Scattered (1-10) ☐ Common (10-20) ☐ Abundant (> 20)

Fallen trees or branches present >50 cm diameter?

☒ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☒ Sparse ☐ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10–30 cm diameter?

☐ Absent ☒ Scattered ☐ Common ☐ Abundant

Surface rocks of > 30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☒ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☒ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☒ Poor ☐ Average ☐ Good ☐ Excellent

Rock dependent fauna

☒ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☐ Absent ☒ Poor ☐ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☐ Poor ☐ Average ☒ Good ☐ Excellent

OTHER HABITAT QUALITY ASPECTS:

Raining
frog calls

WETLANDS

Wetlands present?

☐ YES ☒ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☑ Beach (all)

☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh

☐ Tidal forest (e.g. mangrove) ☐ Lagoon

☐ Saline / brackish lake / swamp

INLAND WETLAND:

☐ Creek ➡ ☐ Dry ☐ Flowing

☐ River ☐ Floodplain, river flat

☐ Small billabong , pools (<8 ha) ☐ Freshwater lake (>8 ha)

☐ Shrubby swamp ☐ Wooded swamp

☐ Gilgai ☐ Claypan

☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank

☐ Irrigation channel, rice field ☐ Wastewater treatment

☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☐ < 2 ha ☐ 2-8 ha ☐ 8-100 ha ☐ >100 ha

➡ Water mostly

☐ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed

☐ Islands for birds to roost and nest

☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat

☐ Fencing to exclude grazing stock from direct access to the waters edge

☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Photo
101-0285 facing SW
Monoculture of ironbark
Stumps indicating historical thinning

SITE NO. 2017

HLA

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT S 6066503 Lucas energy DATE 4/9/08

SITE NO. ZO18 LOCATION KP 66.8 Wallaroo Nature Reserve NAME L.G, D.R.

AMG 56H EASTING 386536 NORTHING 6392487

DISTANCE and DIRECTION from TOWN: SITE IS 1.8 km (s) SE (N. S. E. W.) OF Cowra town IN NSW (state)

WAS GPS USED? ☒ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☒ WGS 84 or GDA ALTITUDE 25 m

GENERAL

☒ Remnant trees ☒ Regrowth ☐ Plantation

☒ Native grasses (trees / shrubs may be present)

☐ Non-native grasses (trees / shrubs may be present)

☐ Improved pasture ☐ Other

Habitat type Open eucalypt forest

RE — VEG FW LANDFORM PLA

SOIL Clay Loam

LANDSCAPE

Shape of patch?

☒ Circular / square ☐ Irregular ☐ Strip <50 m

☐ Strip >50 m

Strip details: ☐ Creek / river ☐ Roadside ☐ Windbreak ☐ Other

Width

Area of full patch that contains 1 ha area:

☐ < 3 ha ☐ 3-10 ha ☐ 11-30 ha

☐ 31-100 ha ☐ 101-400 ha ☒ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

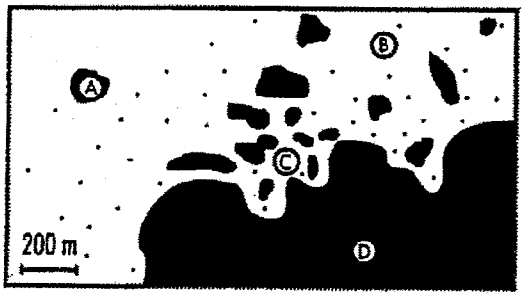
☒ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

☐ A- Isolated ☐ B-Semi isolated

☐ C-Not isolated ☒ D-Continuous tree / shrub

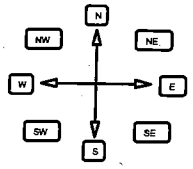
■ Continuous tree/shrub cover ⁘ Scattered trees ☐ Grassland



Is this 1 ha area on a:

☒ Flat ☐ Ridge ☐ Gully ☐ Slope

If slope, give aspect over 20 m



Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller that 3 m):

☐ Absent ☐ Sparse ☒ Open ☐ Dense

If trees present:

☐ single tree species

☐ two or three species

☒ more than three species

Are trees mostly?

☒ native ☐ exotic

Species: Corymbia citriodora ①
E. siderophloia ①

Average height of overstory?

☐ 3-5 m ☐ 5-10 m ☒ 10-15 m ☐ > 15 m

Are the trees?

☐ Even-aged (Trees mostly the same age or size)

☒ Multi-aged (Trees of varing size or age)

Are there obvious signs of dieback in the tree canopy?

☐ None ☒ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

☐ Absent ☐ Scattered ☐ Common ☒ Abundant

If shrubs present:

☒ single shrub species

☐ two or three species

☐ more than three species

Are shrubs mostly?

☒ native ☐ exotic

Species: Melaleuca nodosa

Low shrub cover (0.5 m – 2 m):

☐ Absent ☒ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☒ two or three species

☐ more than three species

Are shrubs mostly?

☒ native ☐ exotic

Species: Bursaria spinosa Acacia irrorata Pultenea sp.

Dominant ground cover within this 1 ha area:

☒ Tussocks ☐ Hummocks ☐ Continuous grass / herbs

☐ Low Heath ☐ Weeds ☒ ~~Bare dirt / rocks~~ / litter

LAND USE

Used for?

☐ Mixed grazing ☐ Sheep ☐ Cattle

☐ Crops Crop type

☒ Other Other Nature reserve

HLA

HABITAT ASSESSMENT (*cont.*)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0) ☒ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

If present, are they mostly? ☐ dead ☒ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☒ Scattered (1-10) ☐ Common (10-20) ☐ Abundant (> 20)

Fallen trees or branches present >50 cm diameter?

☒ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☐ Sparse ☒ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10–30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of > 30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☐ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☒ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☒ Poor ☐ Average ☐ Good ☐ Excellent

Rock dependent fauna

☒ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☐ Absent ☒ Poor ☐ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☐ Poor ☒ Average ☐ Good ☐ Excellent

OTHER HABITAT QUALITY ASPECTS:

Frog calls

WETLANDS

Wetlands present?

☐ YES ☒ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)

☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh

☐ Tidal forest (e.g. mangrove) ☐ Lagoon

☐ Saline / brackish lake / swamp

INLAND WETLAND:

☐ Creek ➡ ☐ Dry ☐ Flowing

☐ River ☐ Floodplain, river flat

☐ Small billabong , pools (<8 ha) ☐ Freshwater lake (>8 ha)

☐ Shrubby swamp ☐ Wooded swamp

☐ Gilgai ☐ Claypan

☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank

☐ Irrigation channel, rice field ☐ Wastewater treatment

☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☐ < 2 ha ☐ 2-8 ha ☐ 8-100 ha ☐ >100 ha

➡ Water mostly

☐ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed

☐ Islands for birds to roost and nest

☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat

☐ Fencing to exclude grazing stock from direct access to the waters edge

☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Photo 101-0293 NW of habitat
101-0291 Powerline eastment SW

Wallaroo Nature reserve

Habitat assessment adjacent to the powerline easement West, close to road.
Young remnant with few large trees, stags and logs.

SITE NO. 2018

HLA

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT 560665O3 Lucas Energy DATE 4/9/08

SITE NO. ZO19 LOCATION KP 68.9 Wallanoo Nature Reserve NAME L.G., D.R.

AMG 56H EASTING 385631 NORTHING 6390751

DISTANCE and DIRECTION from TOWN: SITE IS 3.2km km (s) SSE (N. S. E. W.) OF Clarence Town IN NSW (state)

WAS GPS USED? ☒ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☒ WGS 84 or (GDA) ALTITUDE 21m

GENERAL

☒ Remnant trees ☒ Regrowth ☐ Plantation

☒ Native grasses (trees / shrubs may be present)

☒ Non-native grasses (trees / shrubs may be present)

☐ Improved pasture ☐ Other

Habitat type Gully forest

RE — VEG FW LANDFORM GUL

SOIL

LANDSCAPE

Shape of patch?

☒ Circular / square ☐ Irregular ☐ Strip <50 m

☐ Strip >50 m

Strip details: ☐ Creek / river ☐ Roadside ☐ Windbreak ☐ Other

Width

Area of full patch that contains 1 ha area:

☐ < 3 ha ☐ 3-10 ha ☐ 11-30 ha

☐ 31-100 ha ☐ 101-400 ha ☒ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

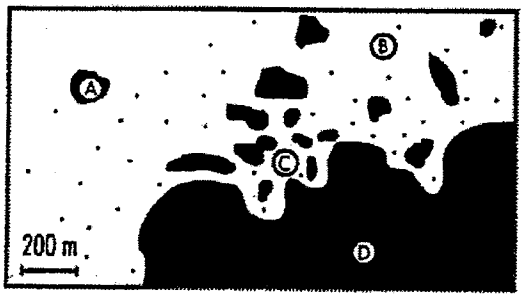
☒ YES ☐ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

☐ A- Isolated ☐ B-Semi isolated

☐ C-Not isolated ☒ D-Continuous tree / shrub

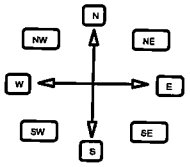
■ Continuous tree/shrub cover ⁘ Scattered trees ☐ Grassland



Is this 1 ha area on a:

☐ Flat ☐ Ridge ☒ Gully ☐ Slope

If slope, give aspect over 20 m



Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller that 3 m):

☐ Absent ☐ Sparse ☒ Open ☐ Dense

If trees present:

☐ single tree species

☐ two or three species

☐ more than three species

Are trees mostly?

☒ native ☐ exotic

Species: E. siderophloia ①
C. citriodora ①

Average height of overstory?

☐ 3-5 m ☐ 5-10 m ☒ 10-15 m ☐ > 15 m

Are the trees?

☐ Even-aged (Trees mostly the same age or size)

☒ Multi-aged (Trees of varing size or age)

Are there obvious signs of dieback in the tree canopy?

☐ None ☒ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

☐ Absent ☐ Scattered ☒ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☐ two or three species

☒ more than three species

Are shrubs mostly?

☒ native ☒ exotic

Species: Acacia sp. Lantana

Low shrub cover (0.5 m – 2 m):

☐ Absent ☒ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☒ two or three species

☐ more than three species

Are shrubs mostly?

☒ native ☐ exotic

Species:

Dominant ground cover within this 1 ha area:

☐ Tussocks ☐ Hummocks ☒ Continuous grass / ~~herbs~~

☐ Low Heath ☐ Weeds ☒ ~~Bare dirt / rocks~~ / litter

LAND USE

Used for?

☐ Mixed grazing ☐ Sheep ☐ Cattle

☐ Crops Crop type

☒ Other Other Nature reserve

HLA

HABITAT ASSESSMENT (*cont.*)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0) ☒ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

If present, are they mostly? ☐ dead ☐ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☒ Scattered (1-10) ☐ Common (10-20) ☐ Abundant (> 20)

Fallen trees or branches present >50 cm diameter?

☒ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☐ Sparse ☒ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10–30 cm diameter?

☐ Absent ☒ Scattered ☐ Common ☐ Abundant

Surface rocks of > 30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☐ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☒ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☒ Poor ☐ Average ☐ Good ☐ Excellent

Rock dependent fauna

☒ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☐ Absent ☒ Poor ☐ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☐ Poor ☐ Average ☒ Good ☐ Excellent

OTHER HABITAT QUALITY ASPECTS:

Young remnant forest with few large trees, stags and logs.
frog calls

WETLANDS

Wetlands present?

☒ YES ☐ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)

☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh

☐ Tidal forest (e.g. mangrove) ☐ Lagoon

☐ Saline / brackish lake / swamp

INLAND WETLAND:

☒ Creek ➡ ☐ Dry ☐ Flowing

☐ River ☐ Floodplain, river flat

☐ Small billabong , pools (<8 ha) ☐ Freshwater lake (>8 ha)

☐ Shrubby swamp ☐ Wooded swamp

☐ Gilgai ☐ Claypan

☒ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank

☐ Irrigation channel, rice field ☐ Wastewater treatment

☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☒ < 2 ha ☐ 2-8 ha ☐ 8-100 ha ☐ >100 ha

➡ Water mostly

☒ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☐ Broad, shallow, swampy areas for birds to feed

☐ Islands for birds to roost and nest

☐ Dead or living trees in the water (partly submerged) for roosting and nesting habitat

☐ Fencing to exclude grazing stock from direct access to the waters edge

☐ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Several drainage gullies perpendicular to the powerline.

101-0300 East Photos
0301 West

SITE NO. 2019

HLA

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT: S6066503 Lucas Energy — DATE: 4/9/08

SITE NO. Z020 — LOCATION: WLND7 KP 75.5 Wetland NE Williams River — NAME: L.G., D.R.

AMG: 56H — EASTING: 380819 — NORTHING: 6387331

DISTANCE and DIRECTION from TOWN: SITE IS 8 km (s) SW (N. S. E. W.) OF Clarencetown IN NSW (state)

WAS GPS USED? [x] YES [ ] NO — IF YES, WHICH DATUM WAS USED? [ ] Aust (84/66) [x] WGS 84 or (GDA) — ALTITUDE: 10 m

GENERAL

[x] Remnant trees [x] Regrowth [ ] Plantation

[x] Native grasses (trees / shrubs may be present)

[ ] Non-native grasses (trees / shrubs may be present)

[ ] Improved pasture [ ] Other

Habitat type: Wetland

RE: — VEG: FE — LANDFORM: SWP

SOIL: clay loam.

LANDSCAPE

Shape of patch?

[x] Circular / square [ ] Irregular [ ] Strip <50 m

[ ] Strip >50 m

Strip details: [ ] Creek / river [ ] Roadside [ ] Windbreak [ ] Other

Width

Area of full patch that contains 1 ha area:

[ ] < 3 ha [x] 3-10 ha [ ] 11-30 ha

[ ] 31-100 ha [ ] 101-400 ha [ ] > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

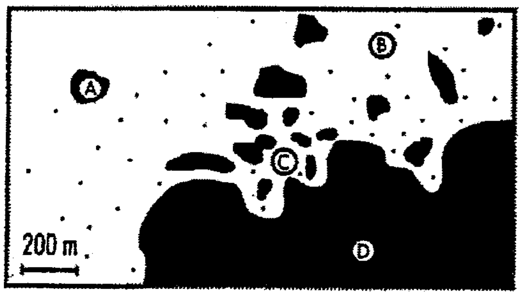
[x] YES [ ] NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

[ ] A- Isolated [ ] B-Semi isolated

[x] C-Not isolated [ ] D-Continuous tree / shrub

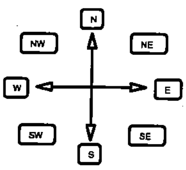
■ Continuous tree/shrub cover ⁝ Scattered trees ☐ Grassland



Is this 1 ha area on a:

[x] Flat [ ] Ridge [ ] Gully [ ] Slope

If slope, give aspect over 20 m



Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller that 3 m):

[ ] Absent [x] Sparse [ ] Open [ ] Dense

If trees present:

[ ] single tree species

[x] two or three species

[ ] more than three species

Are trees mostly? [x] native [ ] exotic

Species: Melaleuca quinquinervia②, E. tereticornis①, C. citriodora①

Average height of overstory?

[ ] 3-5 m [ ] 5-10 m [x] 10-15 m [ ] > 15 m

Are the trees?

[ ] Even-aged (Trees mostly the same age or size)

[x] Multi-aged (Trees of varing size or age)

Are there obvious signs of dieback in the tree canopy?

[ ] None [x] Some dieback [ ] Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

[x] Absent [ ] Scattered [ ] Common [ ] Abundant

If shrubs present:

[ ] single shrub species

[ ] two or three species

[ ] more than three species

Are shrubs mostly? [ ] native [ ] exotic

Species:

Low shrub cover (0.5 m – 2 m):

[x] Absent [ ] Scattered [ ] Common [ ] Abundant

If shrubs present:

[ ] single shrub species

[ ] two or three species

[ ] more than three species

Are shrubs mostly? [ ] native [ ] exotic

Species:

Dominant ground cover within this 1 ha area:

[ ] Tussocks [ ] Hummocks [x] Continuous grass / herbs

[ ] Low Heath [ ] Weeds [ ] Bare dirt / rocks / litter

LAND USE

Used for?

[ ] Mixed grazing [ ] Sheep [x] Cattle

[ ] Crops — Crop type

[ ] Other — Other

HLA

HABITAT ASSESSMENT (*cont.*)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0) ☒ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

If present, are they mostly? ☐ dead ☒ living

Fallen trees or branches present 10-50 cm diameter?

☐ Absent (0) ☒ Scattered (1-10) ☐ Common (10-20) ☐ Abundant (> 20)

Fallen trees or branches present >50 cm diameter?

☒ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☐ Absent ☒ Sparse ☐ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10–30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of > 30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☐ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☒ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☒ Poor ☐ Average ☐ Good ☐ Excellent

Rock dependent fauna

☒ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☐ Absent ☒ Poor ☐ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☐ Poor ☒ Average ☐ Good ☐ Excellent

OTHER HABITAT QUALITY ASPECTS: Weather: Raining

Frog calls

To minimise disturbance deviat west of powerline + paperbark swamp, or HDD preferable to utilize existing clearings.

WETLANDS

Wetlands present?

☒ YES ☐ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)

☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh

☐ Tidal forest (e.g. mangrove) ☐ Lagoon

☐ Saline / brackish lake / swamp

INLAND WETLAND:

☐ Creek ➡ ☐ Dry ☐ Flowing

☐ River ☐ Floodplain, river flat

☐ Small billabong , pools (<8 ha) ☐ Freshwater lake (>8 ha)

☐ Shrubby swamp ☒ Wooded swamp

☐ Gilgai ☐ Claypan

☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank

☐ Irrigation channel, rice field ☐ Wastewater treatment

☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☐ < 2 ha ☒ 2-8 ha ☐ 8-100 ha ☐ >100 ha

➡ Water mostly

☒ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☒ Broad, shallow, swampy areas for birds to feed

☒ Islands for birds to roost and nest

☒ Dead or living trees in the water (partly submerged) for roosting and nesting habitat

☐ Fencing to exclude grazing stock from direct access to the waters edge

☒ Dense tree and / or shrub cover close to the edge of the water

ADDITIONAL NOTES:

Wetland surrounded by grazing pastures. Some remnant trees creating sparse forest. Trees in the wetland removed for powerline and telecomunications easement.

Photo 101-0308 SW

101-0309 SE

SITE NO. 2020

HLA

HABITAT ASSESSMENT FOR 1 ha SEARCH AREA

PROJECT S0066503 Lucas Energy DATE 5/9/08

SITE NO. ZO21 LOCATION KP 72.6 Wetland E Williams River NAME L.G, D.R.

AMG 56H EASTING 382462 NORTHING 6389629

DISTANCE and DIRECTION from TOWN: SITE IS 5.3 km (s) SW (N. S. E. W.) OF Clarencetown IN NSW (state)

WAS GPS USED? ☒ YES ☐ NO IF YES, WHICH DATUM WAS USED? ☐ Aust (84/66) ☒ WGS 84 or GDA ALTITUDE 5m

GENERAL

☒ Remnant trees ☐ Regrowth ☐ Plantation

☒ Native grasses (trees / shrubs may be present)

☒ Non-native grasses (trees / shrubs may be present)

☐ Improved pasture ☐ Other

Habitat type Wetland

RE — VEG FE LANDFORM SWP

SOIL clay loam

LANDSCAPE

Shape of patch?

☐ Circular / square ☒ Irregular ☐ Strip <50 m

☐ Strip >50 m

Strip details: ☐ Creek / river ☐ Roadside ☐ Windbreak ☒ Other Wetland

Width

Area of full patch that contains 1 ha area:

☒ < 3 ha ☐ 3-10 ha ☐ 11-30 ha

☐ 31-100 ha ☐ 101-400 ha ☐ > 400 ha

Is the 1 ha patch connected to other similar sized or larger patches of vegetation?

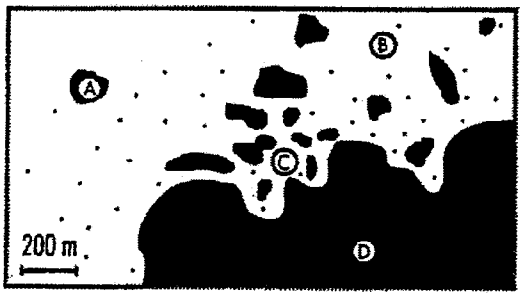
☐ YES ☒ NO

Position of this 1 ha search area relative to the surrounding tree / shrub cover?

☐ A- Isolated ☐ B-Semi isolated

☒ C-Not isolated ☐ D-Continuous tree / shrub

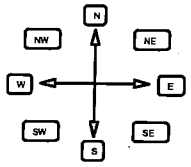
■ Continuous tree/shrub cover ⁘ Scattered trees ☐ Grassland



Is this 1 ha area on a:

☒ Flat ☐ Ridge ☐ Gully ☐ Slope

If slope, give aspect over 20 m



Degrees of slope over 20 m:

VEGETATION STRUCTURE : OVERSTORY

Tree canopy cover (trees taller that 3 m):

☐ Absent ☒ Sparse ☐ Open ☐ Dense

If trees present:

☐ single tree species

☒ two or three species

☐ more than three species

Are trees mostly?

☒ native ☐ exotic

Species: Melaleuca styphelioides
Casuarina glauca

Average height of overstory?

☐ 3-5 m ☒ 5-10 m ☐ 10-15 m ☐ > 15 m

Are the trees?

☐ Even-aged (Trees mostly the same age or size)

☒ Multi-aged (Trees of varing size or age)

Are there obvious signs of dieback in the tree canopy?

☐ None ☒ Some dieback ☐ Extensive dieback

VEGETATION STRUCTURE : UNDERSTORY

Tall understory shrub cover (>2 m):

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☐ two or three species

☐ more than three species

Are shrubs mostly?

☐ native ☐ exotic

Species:

Low shrub cover (0.5 m – 2 m):

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

If shrubs present:

☐ single shrub species

☐ two or three species

☐ more than three species

Are shrubs mostly?

☐ native ☐ exotic

Species:

Dominant ground cover within this 1 ha area:

☐ Tussocks ☐ Hummocks ☒ Continuous grass / herbs sedges

☐ Low Heath ☐ Weeds ☐ Bare dirt / rocks / litter

LAND USE

Used for?

☐ Mixed grazing ☐ Sheep ☒ Cattle

☐ Crops Crop type

☐ Other Other

HLA

HABITAT ASSESSMENT (*cont.*)

KEY HABITAT FEATURES

HOLLOWS and LOGS

No. of hollows within 1 ha patch?

☐ Absent (0) ☒ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

If present, are they mostly? ☐ dead ☐ living

Fallen trees or branches present 10-50 cm diameter?

☒ Absent (0) ☐ Scattered (1-10) ☐ Common (10-20) ☐ Abundant (> 20)

Fallen trees or branches present >50 cm diameter?

☒ Absent (0) ☐ Scattered (1-5) ☐ Common (6-10) ☐ Abundant (>10)

Leaf litter?

☒ Absent ☐ Sparse ☐ Patchy ☐ Dense

Mistletoe within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

ROCKS

Outcrops within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of 10–30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Surface rocks of > 30 cm diameter?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

Cliffs and overhangs within this 1 ha area?

☒ Absent ☐ Scattered ☐ Common ☐ Abundant

If present, are they mostly?

☐ Sandstone ☐ Granite

☐ Basalt ☐ Karst

☐ Other

CRACKING CLAY SOILS

☐ YES ☒ NO

HABITAT QUALITY FOR:

Hollow dependent fauna

☐ Absent ☒ Poor ☐ Average ☐ Good ☐ Excellent

Rock dependent fauna

☒ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Log dependent fauna

☒ Absent ☐ Poor ☐ Average ☐ Good ☐ Excellent

Small birds

☐ Absent ☐ Poor ☒ Average ☐ Good ☐ Excellent

OTHER HABITAT QUALITY ASPECTS:

Frog calls
Waterfowl

WETLANDS

Wetlands present?

☒ YES ☐ NO

TYPE OF WETLAND:

MARINE:

☐ Coral reef ☐ Rocky shore ☐ Beach (all)

☐ Estuarine ☐ Tidal mudflat ☐ Tidal marsh

☐ Tidal forest (e.g. mangrove) ☐ Lagoon

☐ Saline / brackish lake / swamp

INLAND WETLAND:

☐ Creek ➡ ☐ Dry ☐ Flowing

☐ River ☐ Floodplain, river flat

☐ Small billabong , pools (<8 ha) ☐ Freshwater lake (>8 ha)

☐ Shrubby swamp ☒ Wooded swamp

☐ Gilgai ☐ Claypan

☐ Ephemeral Marsh / swamp with emergent veg

ARTIFICIAL WETLANDS:

☐ Large dam, reservoir (>8 ha) ☐ Small dam, pond, tank

☐ Irrigation channel, rice field ☐ Wastewater treatment

☐ Canal, drainage channel, ditch ☐ Salt pond / field

AREA OF WETLAND:

☒ < 2 ha ☐ 2-8 ha ☐ 8-100 ha ☐ >100 ha

Water mostly ➡

☒ Fresh ☐ Brackish / saline ☐ Salty

FEATURES PRESENT

☒ Broad, shallow, swampy areas for birds to feed

☐ Islands for birds to roost and nest

☒ Dead or living trees in the water (partly submerged) for roosting and nesting habitat

☐ Fencing to exclude grazing stock from direct access to the waters edge

☒ ~~Dense~~ tree and / or shrub cover close to the edge of the water ➡ Patchy

ADDITIONAL NOTES:

Photo 101-0310 S GPS WLND 10
101-0311 E WLND 9

Small creek connecting wetland with river
093 wypnt ↙

water hyacinth

SITE NO. 2021