Project Name: **Cooloola**
Project Code: **Cooloola** **Site ID:** **B849** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (QLD)**

Site Information

Desc. By:	C.H. Thompson	**Locality:**	Warrawonga Hole 1m W of Peg 0
Date Desc.:	17/09/74	**Elevation:**	210 metres
Map Ref.:	Sheet No. : 9545-IV 1:50000	**Rainfall:**	No Data
Northing/Long.:	153.0894845	**Runoff:**	No Data
Easting/Lat.:	-26.03297593	**Drainage:**	Rapidly drained

Geology

ExposureType:	No Data	**Conf. Sub. is Parent. Mat.:**	No Data
Geol. Ref.:	No Data	**Substrate Material:**	No Data

Land Form

Rel/Slope Class:	No Data	**Pattern Type:**	No Data
Morph. Type:	No Data	**Relief:**	120 metres
Elem. Type:	Dune	**Slope Category:**	No Data
Slope:	%	**Aspect:**	No Data

Surface Soil Condition (dry):

Erosion:

Soil Classification

Australian Soil Classification:
Podosol
ASC Confidence:
Confidence level not specified

Mapping Unit: N/A
Principal Profile Form: Uc2.22
Great Soil Group: Podzol

Site Disturbance:

Vegetation:

Mid Strata - , 12.01-20m, . *Species includes - Casuarina torulosa
Tall Strata - , >35.01m, . *Species includes - Eucalyptus pilularis

Surface Coarse Fragments:

Profile Morphology

A11	0 - 0.05 m	Dark grey (10YR4/1-Moist); Grey (10YR6/1-Moist); ; Sand; Single grain grade of structure; Loose consistence; Field pH 6 (Raupach); Wavy change to -
A12	0.05 - 0.1 m	Very dark grey (10YR3/1-Moist); Grey (10YR5/1-Moist); ; Sand; Single grain grade of structure; Weak consistence; Field pH 5.5 (Raupach);
A13	0.1 - 0.2 m	Dark grey (10YR4/1-Moist); ; Sand; Single grain grade of structure; Weak consistence; Field pH 5.6 (Raupach);
A13	0.2 - 0.3 m	Dark grey (10YR4/1-Moist); ; Sand; Single grain grade of structure; Weak consistence; Field pH 5.6 (Raupach);
A13	0.3 - 0.6 m	Dark grey (10YR4/1-Moist); ; Sand; Single grain grade of structure; Weak consistence; Field pH 5.6 (Raupach);
A14	0.6 - 0.7 m	Grey (10YR5/1-Moist); ; Sand; Single grain grade of structure; Weak consistence; Field pH 5.7 (Raupach);
A15	0.7 - 0.9 m	Grey (10YR6/1-Moist); ; Sand; Single grain grade of structure; Very weak consistence; Field pH 6.5 (Raupach);
A15	0.9 - 1.2 m	Grey (10YR5/1-Moist); ; Sand; Single grain grade of structure; Very weak consistence; Field pH 6.5 (Raupach); Diffuse change to -
A2	1.2 - 1.5 m	Grey (10YR6/1-Moist); Light grey (10YR7/1-Moist); ; Sand; Single grain grade of structure; Loose consistence; Field pH 7 (Raupach);
A2	1.5 - 1.8 m	Grey (10YR6/1-Moist); Light grey (10YR7/1-Moist); ; Sand; Single grain grade of structure; Loose consistence; Field pH 7 (Raupach);
A2	1.5 - 1.8 m	Grey (10YR6/1-Moist); Light grey (10YR7/1-Moist); ; Sand; Single grain grade of structure; Field pH 7 (Raupach);
A2	1.8 - 2.1 m	Grey (10YR6/1-Moist); Light grey (10YR7/1-Moist); ; Sand; Single grain grade of structure; Loose consistence; Field pH 7 (Raupach);

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A2	2.1 - 2.4 m	Grey (10YR6/1-Moist); Light grey (10YR7/1-Moist); ; Sand; Loose consistence; Field pH 7 (Raupach);
A2	2.4 - 2.7 m	Grey (10YR6/1-Moist); Light grey (10YR7/1-Moist); ; Sand; Single grain grade of structure; Loose consistence; Field pH 7 (Raupach);
A2	2.7 - 3 m	Grey (10YR6/1-Moist); Light grey (10YR7/1-Moist); ; Sand; Single grain grade of structure; Loose consistence; Field pH 7 (Raupach);
A2	3 - 3.3 m	Grey (10YR6/1-Moist); Light grey (10YR7/1-Moist); ; Sand; Single grain grade of structure; Loose consistence; Field pH 7 (Raupach);
A2	3.3 - 3.6 m	Grey (10YR6/1-Moist); Light grey (10YR7/1-Moist); ; Sand; Single grain grade of structure; Loose consistence; Field pH 7 (Raupach); Diffuse change to -
B11	3.6 - 3.9 m	Light grey (10YR7/2-Moist); Light grey (10YR7/2-Moist); ; Sand; Single grain grade of structure; Weak consistence; Field pH 6.5 (Raupach);
B11	3.9 - 4.2 m	Light grey (10YR7/2-Moist); Dark brown (10YR3/3-Moist); ; Sand; Single grain grade of structure; Weak consistence; Field pH 6.5 (Raupach);
B11	3.9 - 4.2 m	Light grey (10YR7/2-Moist); Dark brown (10YR3/3-Moist); ; Sand; Single grain grade of structure; Weak consistence; Field pH 6.5 (Raupach);
B11	4.2 - 4.5 m	Light grey (10YR7/2-Moist); Dark brown (10YR3/3-Moist); ; Sand; Single grain grade of structure; Weak consistence; Field pH 6.5 (Raupach);
B12	4.5 - 4.8 m	Light grey (10YR7/2-Moist); , 7.5YR52; Sand; Single grain grade of structure; Weak consistence; Field pH 6 (Raupach);
B12	4.8 - 5.1 m	Light grey (10YR7/2-Moist); , 7.5YR52; Sand; Single grain grade of structure; Weak consistence; Field pH 6 (Raupach); Wavy change to -
B12	5.1 - 5.3 m	Light grey (10YR7/2-Moist); , 7.5YR52; Sand; Single grain grade of structure; Weak consistence; Field pH 6 (Raupach); Diffuse change to -
B2	5.3 - 5.4 m	Yellowish brown (10YR5/4-Moist); , 10YR43; Sand; Single grain grade of structure; Weak consistence; Field pH 5.5 (Raupach);
B2	5.4 - 5.7 m	Yellowish brown (10YR5/4-Moist); , 10YR43; Sand; Single grain grade of structure; Weak consistence; Field pH 5.5 (Raupach);
B2	5.7 - 6 m	Yellowish brown (10YR5/4-Moist); , 10YR43; Sand; Single grain grade of structure; Weak consistence; Field pH 5.5 (Raupach);
B2	6 - 6.3 m	Yellowish brown (10YR5/4-Moist); , 10YR43; Sand; Single grain grade of structure; Weak consistence; Field pH 5.5 (Raupach); Diffuse change to -
B2	6.3 - 6.6 m	Yellowish brown (10YR5/4-Moist); , 10YR43; Sand; Single grain grade of structure; Weak consistence; Field pH 5.5 (Raupach);
B3	6.6 - 6.9 m	Light yellowish brown (10YR6/4-Moist); , 10YR43; Sand; Single grain grade of structure; Weak consistence; Field pH 6 (Raupach);
B3	6.9 - 7.2 m	Light yellowish brown (10YR6/4-Moist); , 10YR43; Sand; Single grain grade of structure; Weak consistence; Field pH 6 (Raupach); Diffuse change to -
C1	7.2 - 7.5 m	Light yellowish brown (10YR6/4-Moist); ; Sand; Single grain grade of structure; Loose consistence; Field pH 7 (Raupach);
C1	7.5 - 7.8 m	Light yellowish brown (10YR6/4-Moist); ; Sand; Single grain grade of structure; Loose consistence; Field pH 7 (Raupach);
C1	7.8 - 8.1 m	Light yellowish brown (10YR6/4-Moist); ; Sand; Single grain grade of structure; Loose consistence; Field pH 7 (Raupach);
C2	8.1 - 8.4 m	Very pale brown (10YR7/4-Moist); ; Sand; Single grain grade of structure; Field pH 7
C2	8.4 - 8.7 m	Very pale brown (10YR7/4-Moist); ; Sand; Single grain grade of structure; Field pH 7
C2	8.7 - 9 m	Very pale brown (10YR7/4-Moist); ; Sand; Single grain grade of structure; Field pH 7

Morphological Notes

A11	Discrete OM inclusions
A12	Diffuse and discrete OM

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A13	Diffuse OM, some worm and root channel fill DbG.
A14	Diffuse OM.
A15	Low amounts of diffuse OM.
B11	Very pale sand with trans OM patches < with depth.
B12	Soft OM patches <.
B2	DB organic stained patches make up 35% of material.
B3	Organic patches >
C1	Very occas. DB patches
C2	Unaltered sandblow sand.

Observation Notes

Parent material: Quaternary silica sands - Warrawonga Formation. Landform: Sandblow (crest of nose) stabilised.

Site Notes

State forest for hardwoods, principally E. pilularis.

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations Ca	Mg	K	Na	Exchangeable Acidity	CEC	ECEC	ESP
m		dS/m				Cmol (+)/kg				%
0 - 0.05	5.8H	<0.02B								
0.05 - 0.1	4.9H	<0.02B								
0.1 - 0.2	4.7H	<0.04B	0.1K	<0.1	<0.1	<0.1	<1.4D		1.5F	
0.2 - 0.3	4.8H	<0.02B								
0.3 - 0.6	4.9H	<0.02B								
0.6 - 0.7	5.2H	<0.02B								
0.7 - 0.9	5.5H	<0.02B								
0.9 - 1.2	5.6H	<0.02B								
1.2 - 1.5	6H	<0.02B								
1.5 - 1.8										
1.8 - 2.1										
2.1 - 2.4										
2.4 - 2.7										
2.7 - 3	6.5H	<0.02B	<0.1K	<0.1	<0.1	<0.1			0.4F	
3 - 3.3										
3.3 - 3.6	6.4H	<0.02B								
3.6 - 3.9	6.4H	<0.02B								
3.9 - 4.2										
4.2 - 4.5	6.5H	<0.02B								
4.5 - 4.8										
4.8 - 5.1	6.3H	<0.02B	<0.1K	<0.1	<0.1	<0.1			0.3F	
5.1 - 5.3										
5.3 - 5.4	5.6H	<0.02B	<0.1K	<0.1	<0.1	<0.1	0.7D		0.7F	
5.4 - 5.7										
5.7 - 6	5.7H	<0.02B	<0.1K	<0.1	<0.1	<0.1			0.9F	
6 - 6.3										
6.3 - 6.6	6.1H	<0.02B								
6.6 - 6.9										
6.9 - 7.2	6H	<0.02B	<0.1K	<0.1	<0.1	<0.1			0.5F	
7.2 - 7.5										
7.5 - 7.8	6.2H	<0.02B								
7.8 - 8.1										
8.1 - 8.4										
8.4 - 8.7										
8.7 - 9	6H	<0.02B	<0.1K	<0.1	<0.1	<0.1			0.1F	

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle Size Analysis GV	CS	FS	Silt	Clay
m	%	%	mg/kg	%	%	%	Mg/m3			%		
0 - 0.05		0.82E	3B		0.026B							
0.05 - 0.1		0.85E	3B		0.025B							
0.1 - 0.2		0.74E	4B		0.02B				97I		1	0
0.2 - 0.3		0.67E	2B		0.02B							
0.3 - 0.6		0.47E	3B		0.009B							
0.6 - 0.7		0.18E	2B		0.005B							
0.7 - 0.9		0.19E	2B		<0.004B							
0.9 - 1.2		0.09E	1B		0.001B							
1.2 - 1.5		0.04E	1B		0.001B							
1.5 - 1.8												
1.8 - 2.1												

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2.1 - 2.4							
2.4 - 2.7							
2.7 - 3					97I	2	1
3 - 3.3							
3.3 - 3.6							
3.6 - 3.9							
3.9 - 4.2							
4.2 - 4.5							
4.5 - 4.8							
4.8 - 5.1					99I	0	0
5.1 - 5.3							
5.3 - 5.4							
5.4 - 5.7							
5.7 - 6	0.23E	7B	0.008B		92I	1	8
6 - 6.3							
6.3 - 6.6	0.16E	16B	0.004B		99I	1	1
6.6 - 6.9							
6.9 - 7.2	0.1E	17B	0.004B		98I	0	2
7.2 - 7.5							
7.5 - 7.8	0.07E	16B	0.003B				
7.8 - 8.1							
8.1 - 8.4							
8.4 - 8.7							
8.7 - 9	0.06E	17B	0.004B		98I	0	1

Depth	COLE	Gravimetric/Volumetric Water Contents						K sat	K unsat
		Sat.	0.05 Bar	0.1 Bar	0.5 Bar	1 Bar	5 Bar	15 Bar		
m		g/g - m3/m3						mm/h	mm/h
0 - 0.05									
0.05 - 0.1									
0.1 - 0.2									
0.2 - 0.3									
0.3 - 0.6									
0.6 - 0.7									
0.7 - 0.9									
0.9 - 1.2									
1.2 - 1.5									
1.5 - 1.8									
1.8 - 2.1									
2.1 - 2.4									
2.4 - 2.7									
2.7 - 3									
3 - 3.3									
3.3 - 3.6									
3.6 - 3.9									
3.9 - 4.2									
4.2 - 4.5									
4.5 - 4.8									
4.8 - 5.1									
5.1 - 5.3									
5.3 - 5.4									
5.4 - 5.7									
5.7 - 6									
6 - 6.3									
6.3 - 6.6									
6.6 - 6.9									
6.9 - 7.2									
7.2 - 7.5									

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7.5 - 7.8
7.8 - 8.1
8.1 - 8.4
8.4 - 8.7
8.7 - 9

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Laboratory Analyses Completed for this profile

15_NR_CA	Exch. basic cations (Ca++) - meq per 100g of soil - Not recorded
15_NR_H	Hydrogen Cation - meq per 100g of soil - Not recorded
15_NR_K	Exch. basic cations (K++) - meq per 100g of soil - Not recorded
15_NR_MG	Exch. basic cations (Mg++) - meq per 100g of soil - Not recorded
15_NR_NA	Exch. basic cations (Na++) - meq per 100g of soil - Not recorded
15J1	Effective CEC
2_LOI	Loss on Ignition (%)
2A1	Air-dry moisture content
3_NR	Electrical conductivity or soluble salts - Not recorded
4_NR	pH of soil - Not recorded
5_NR	Water soluble Chloride - Cl(%) - Not recordede
6Z	Organic carbon (%) - Not recorded
7_NR	Total nitrogen (%) - Not recorded
8A1	Total organic carbon/total nitrogen ratio
9G_BSES	Available P (mg/kg) - Acid P - 0.005M H2SO4 (BSES)
P10_NR_C	Clay (%) - Not recorded
P10_NR_S	Sand (%) - Not recorded
P10_NR_Z	Silt (%) - Not recorded