

Project Name: BAGO-MARAGLE FOREST SOIL SURVEY
Project Code: BGM_FSS **Site ID:** 0158 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (ACT)

Site Information

Desc. By: P. Ryan	Locality:
Date Desc.: 09/04/97	Elevation: 1036 metres
Map Ref.: Sheet No. : 8526 DGPS	Rainfall: No Data
Northing/Long.: 6025595 AMG zone: 55	Runoff: No Data
Easting/Lat.: 618660 Datum: AGD66	Drainage: Very poorly drained

Geology

ExposureType: Undisturbed soil core	Conf. Sub. is Parent. Mat.: Probable
Geol. Ref.: Dga	Substrate Material: Adamellite

Land Form

Rel/Slope Class: No Data	Pattern Type: No Data
Morph. Type: Closed Depression	Relief: No Data
Elem. Type: Drainage depression	Slope Category: No Data
Slope: 1 %	Aspect: 45 degrees

Surface Soil Condition (dry): Hardsetting

Erosion:

Soil Classification

Australian Soil Classification:	Mapping Unit: N/A
Acidic Dermosolic Redoxic Hydrosol Thin Non-gravelly Silty Clayey Giant	Principal Profile Form: Gn3.94
ASC Confidence:	Great Soil Group: Grey-brown podzolic soil
All necessary analytical data are available.	

Site Disturbance: No effective disturbance. Natural

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A1	0 - 0.05 m	Dark greyish brown (10YR4/2-Moist); Substrate influence, 10YR46, 2-10% , Faint; Silty clay loam; Strong grade of structure, 5-10 mm, Angular blocky; Rough-ped fabric; Moderately moist; Firm consistence; Few (2 - 10 %), Ferruginous, Fine (0 - 2 mm), Root linings, weak, segregations;Field pH 4.5 (Raupach); Many, very fine (0-1mm) roots; Few, fine (1-2mm) roots; Abrupt change to -
A2	0.05 - 0.15 m	Greyish brown (10YR5/2-Moist); Substrate influence, 10YR56, 2-10% , Distinct; Silty clay loam; Moderate grade of structure, 20-50 mm, Prismatic; 5-10 mm, Angular blocky; Rough-ped fabric; Moderately moist; Firm consistence; Common (10 - 20 %), Ferruginous, Fine (0 - 2 mm), Root linings, weak, segregations;Field pH 4.5 (Raupach); Common, very fine (0-1mm) roots; Few, fine (1-2mm) roots; Clear change to -
B21	0.15 - 0.3 m	Yellowish brown (10YR5/6-Moist); Substrate influence, 2.5Y62, 10-20% , Distinct; Silty clay; Moderate grade of structure, 20-50 mm, Prismatic; 5-10 mm, Angular blocky; Smooth-ped fabric; Moderately moist; Firm consistence; Few cutans, <10% of ped faces or walls coated, faint; Field pH 4.5 (Raupach); Few, very fine (0-1mm) roots; Clear change to -
B22	0.3 - 0.46 m	Grey (2.5Y6/1-Moist); Substrate influence, 10YR58, 20-50% , Distinct; Medium clay; Strong grade of structure, 20-50 mm, Prismatic; Smooth-ped fabric; Moist; Very firm consistence; Common cutans, 10-50% of ped faces or walls coated, prominent; Field pH 4.5 (Raupach); Few, very fine (0-1mm) roots; Gradual change to -
B23	0.46 - 0.91 m	Grey (2.5Y6/1-Moist); Substrate influence, 10YR58, 2-10% , Distinct; Medium clay; Moderate grade of structure, 20-50 mm, Prismatic; 10-20 mm, Angular blocky; Smooth-ped fabric; Moist; Very firm consistence; Few cutans, <10% of ped faces or walls coated, distinct; Field pH 4.5 (Raupach); Sharp change to -
2B21	0.91 - 1.52 m	Grey (10YR6/1-Moist); Substrate influence, 10YR58, 0-2% , Distinct; Coarse sandy clay; Massive grade of structure; Sandy (grains prominent) fabric; Moist; Firm consistence; 20-50%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Few cutans, <10% of ped faces or walls coated, faint; Field pH 5 (Raupach); Sharp change to -
2B22	1.52 - 1.78 m	Yellowish brown (10YR5/8-Moist); Substrate influence, 10YR63, 20-50% , Distinct; Coarse sandy clay loam; Massive grade of structure; Sandy (grains prominent) fabric; Wet; Very weak consistence; 20-50%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Field pH 5 (Raupach); Clear change to -

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2B23	1.78 - 2.06 m	Grey (2.5Y6/1-Moist); Substrate influence, 7.5YR58, 10-20% , Prominent; Medium clay; Massive grade of structure; Earthy fabric; Wet; Firm consistence; Field pH 5 (Raupach); Abrupt change to -
3A11	2.06 - 2.3 m	Dark grey (10YR4/1-Moist); ; Silty clay; Massive grade of structure; Earthy fabric; Wet; Weak consistence; Few (2 - 10 %), Ferruginous, Fine (0 - 2 mm), Root linings, weak, segregations;Field pH 4.5 (Raupach); Abrupt change to -
3A12	2.3 - 2.46 m	Dark grey (10YR4/1-Moist); Substrate influence, 10YR46, 0-2% , Faint; Coarse sandy clay; Massive grade of structure; Sandy (grains prominent) fabric; Wet; Weak consistence; 20-50%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Few (2 - 10 %), Ferruginous, Fine (0 - 2 mm), Root linings, weak, segregations;Field pH 5 (Raupach); Sharp change to -
3B21	2.46 - 2.5 m	Brownish yellow (10YR6/6-Moist); Substrate influence, 10YR63, 2-10% , Distinct; Coarse sandy clay loam; Massive grade of structure; Sandy (grains prominent) fabric; Wet; Weak consistence; 20-50%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Field pH 4.5 (Raupach); Sharp change to -
3B22	2.5 - 2.52 m	Light brownish grey (2.5Y6/2-Moist); Substrate influence, 10YR66, 2-10% , Distinct; Silty clay; Earthy fabric; Wet; Weak consistence; Field pH 5 (Raupach); Sharp change to -
	2.52 - 2.58 m	Light brownish grey (2.5Y6/2-Moist); Substrate influence, 2.5Y76, 2-10% , Faint; Medium sandy clay loam; Massive grade of structure; Sandy (grains prominent) fabric; Weak consistence; 20-50%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Field pH 5 (Raupach); Sharp change to -
	2.58 - 2.67 m	Light brownish grey (2.5Y6/2-Moist); ; Clay loam, sandy; Massive grade of structure; Earthy fabric; Firm consistence; Field pH 5 (Raupach); Sharp change to -
	2.67 - 2.71 m	Light brownish grey (2.5Y6/2-Moist); ; Medium sandy clay loam; Massive grade of structure; Sandy (grains prominent) fabric; Weak consistence; 20-50%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Field pH 4.5 (Raupach); Sharp change to -
	2.71 - 2.75 m	Grey (2.5Y6/1-Moist); ; Silty clay; Massive grade of structure; Earthy fabric; Firm consistence; Field pH 5 (Raupach); Sharp change to -
	2.75 - 2.8 m	Light brownish grey (2.5Y6/2-Moist); ; Medium sandy clay loam; Massive grade of structure; Sandy (grains prominent) fabric; Weak consistence; 20-50%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Field pH 5 (Raupach); Abrupt change to -
	2.8 - 2.83 m	Grey (2.5Y6/1-Moist); ; Silty clay; Massive grade of structure; Earthy fabric; Firm consistence; Field pH 5 (Raupach); Sharp change to -
	2.83 - 2.87 m	Light brownish grey (2.5Y6/2-Moist); ; Silty clay loam; Massive grade of structure; Sandy (grains prominent) fabric; Weak consistence; 20-50%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Field pH 4.5 (Raupach); Abrupt change to -
	2.87 - 2.9 m	Grey (2.5Y6/1-Moist); ; Silty clay; Massive grade of structure; Earthy fabric; Firm consistence; Field pH 5 (Raupach); Abrupt change to -
	2.9 - 2.98 m	Light brownish grey (2.5Y6/2-Moist); ; Silty clay loam; Massive grade of structure; Sandy (grains prominent) fabric; Weak consistence; 20-50%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Field pH 5 (Raupach); Abrupt change to -
	2.98 - 3.08 m	Light brownish grey (2.5Y6/2-Moist); ; Medium sandy clay; Massive grade of structure; Earthy fabric; Firm consistence; Field pH 5.5 (Raupach); Sharp change to -
	3.08 - 3.24 m	Light brownish grey (2.5Y6/2-Moist); ; Silty clay loam; Massive grade of structure; Sandy (grains prominent) fabric; Weak consistence; 20-50%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Field pH 5.5 (Raupach); Sharp change to -
	3.24 - 3.3 m	Grey (2.5Y6/1-Moist); Substrate influence, 2.5Y63, 2-10% , Faint; Silty clay; Massive grade of structure; Earthy fabric; Firm consistence; Field pH 5 (Raupach); Sharp change to -
	3.3 - 3.36 m	Light brownish grey (2.5Y6/2-Moist); ; Coarse sandy loam; Single grain grade of structure; Sandy (grains prominent) fabric; Very weak consistence; 50-90%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Field pH 5.5 (Raupach); Sharp change to -
	3.36 - 3.98 m	Light brownish grey (2.5Y6/2-Moist); Substrate influence, 7.5YR58, 2-10% , Distinct; Medium heavy clay; Massive grade of structure; Earthy fabric; Firm consistence; Field pH 5 (Raupach); Sharp change to -
	3.98 - 4.05 m	Light brownish grey (2.5Y6/3-Moist); ; Coarse sandy loam; Massive grade of structure; Sandy (grains prominent) fabric; Weak consistence; 20-50%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Field pH 5.5 (Raupach); Abrupt change to -

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- 4.05 - 4.13 m Light brownish grey (2.5Y6/2-Moist); Substrate influence, 2.5Y63, 2-10% , Faint; Coarse sandy clay; Massive grade of structure; Earthy fabric; Weak consistence; Field pH 5 (Raupach); Sharp change to -
- 4.13 - 4.26 m Light brownish grey (2.5Y6/3-Moist); Substrate influence, 2.5Y56, 10-20% , Distinct; Coarse sandy loam; Massive grade of structure; Sandy (grains prominent) fabric; Weak consistence; 20-50%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Field pH 5 (Raupach); Abrupt change to -
- 4.26 - 4.55 m Light brownish grey (2.5Y6/2-Moist); Substrate influence, 10YR56, 2-10% , Faint; Medium clay; Massive grade of structure; Earthy fabric; Firm consistence; Field pH 5 (Raupach); Abrupt change to -
- 4.55 - 4.61 m Light brownish grey (2.5Y6/3-Moist); ; Coarse sandy loam; Massive grade of structure; Sandy (grains prominent) fabric; Weak consistence; 20-50%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Field pH 5 (Raupach); Abrupt change to -
- 4.61 - 4.95 m Light brownish grey (2.5Y6/2-Moist); ; Medium sandy clay; Massive grade of structure; Earthy fabric; Firm consistence; Field pH 5 (Raupach); Sharp change to -
- 4.95 - 5.34 m Light brownish grey (2.5Y6/3-Moist); Substrate influence, 2.5Y66, 2-10% , Faint; Clayey coarse sand; Single grain grade of structure; Sandy (grains prominent) fabric; Firm consistence; 50-90%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Sharp change to -
- 5.34 - 5.39 m Light brownish grey (2.5Y6/2-Moist); ; Silty clay; Massive grade of structure; Earthy fabric; Firm consistence; Sharp change to -
- 5.39 - 5.47 m Grey (2.5Y6/1-Moist); ; Loamy coarse sand; Single grain grade of structure; Sandy (grains prominent) fabric; Very weak consistence; 50-90%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Abrupt change to -
- 5.47 - 5.68 m Greyish brown (10YR5/2-Moist); ; Medium sandy clay loam; Earthy fabric; Weak consistence; Abrupt change to -
- 5.68 - 5.76 m Grey (10YR5/1-Moist); ; Loamy sand; Single grain grade of structure; Sandy (grains prominent) fabric; Very weak consistence; 50-90%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Sharp change to -
- 5.76 - 6 m Substrate influence, 2-10% , Faint; Medium clay; Massive grade of structure; Earthy fabric; Very firm consistence; 2-10%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; 2-10%, fine gravelly, 2-6mm, subangular tabular, Coal, coarse fragments;

Morphological Notes

- B21 Very prominent grey clay ped coatings
- B23 Grey clay.
- 2B21 Grey coarse sand. Distinct change from the layer above. There are several minor bands of clay-rich material with the layer.
- 2B22 Orange mottle coarse sand. Variable layer changing to grey sand to dark brown sand.
- 2B23 Grey mottle clay.
- 3A11 Dark organic rich clay. Top of old profile.
- 3A12 Dark organic rich coarse sand.
- 3B21 First of a series of thinned depositional layers.
- 3B22 Fine clay.
- Coarse sand.
- Fine sandy clay loam.
- Coarse sand.

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Clay.

Coarse sand.

Clay.

Coarse sand.

Clay.

Coarse sand.

Clay.

Coarse sand.

Clay.

Loose coarse sand.

Clay.

Coarse sand quartz and feldspar.

Sandy clay loam.

Coarse sand.

Clay.

Coarse sand.

A variable depositional layer with up to 25 facies - mostly fine grained.

Grade sand, fine to coarse.

Clay.

Coarse sand.

Sand clay loam.

Coarse sand some organic staining.

Very dark OM layer pieces of charcoal present.

Observation Notes

Site is a shallow swampy closed depression - usually water - filled but currently dry.

Site Notes

LEES RD WEST - SWAMP DEPRESSION

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Laboratory Test Results:

Depth	pH	1:5 EC	Ca	Exchangeable Mg	Cations K	Na	Exchangeable Acidity	CEC	ECEC	ESP
m		dS/m				Cmol (+)/kg				%
0 - 0.05	4.11C		1.95H	1.22	0.32	0.1	3.05J OK		6.64E	
0.05 - 0.15	3.88C		0.67H	0.52	0.24	0	3.06J OK		4.49E	
0.15 - 0.3	3.87C		0.31H	0.33	0.12	0	3.24J OK		3.99E	
0.3 - 0.46	3.82C		0.53H	0.58	0.12	0.01	6.35J OK		7.59E	
0.46 - 0.91	3.8C		0.77H	0.79	0.26	0.04	7.22J OK		9.06E	
0.91 - 1.52	3.97C		0.68H	0.59	0.13	0	1.98J OK		3.37E	
1.52 - 1.78	4.11C		0.69H	0.58	0.14	0	1.5J OK		2.91E	
1.78 - 2.06	4.1C		2.58H	1.99	0.4	0.06	3.36J OK		8.4E	
2.06 - 2.3	4.04C		0.56H	0.35	0.19	0	2.44J OK		3.54E	
2.3 - 2.46	4.04C		2.05H	1.31	0.21	0.04	3.15J OK		6.76E	
2.46 - 2.5										
2.5 - 2.52										
2.52 - 2.58										
2.58 - 2.67										
2.67 - 2.71										
2.71 - 2.75										
2.75 - 2.8										
2.8 - 2.83										
2.83 - 2.87										
2.87 - 2.9										
2.9 - 2.98										
2.98 - 3.08										
3.08 - 3.24										
3.24 - 3.3										
3.3 - 3.36										
3.36 - 3.98										
3.98 - 4.05										
4.05 - 4.13										
4.13 - 4.26										
4.26 - 4.55										
4.55 - 4.61										
4.61 - 4.95										
4.95 - 5.34										
5.34 - 5.39										
5.39 - 5.47										
5.47 - 5.68										
5.68 - 5.76										
5.76 - 6										

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle GV	Size CS	Analysis FS	Silt	Clay
m	%	%	mg/kg	%	%	%	Mg/m3			%		

0 - 0.05	5.25B	495.6B	0.46A	1.24	0
0.05 - 0.15	1.64B	168.4B	0.17A	1.18	0
0.15 - 0.3	0.91B	138.2B	0.1A	1.08	1.14
0.3 - 0.46	0.59B	136.9B	0.06A	1.09	0
0.46 - 0.91	0.3B	78.3B	0.04A		0
0.91 - 1.52	0.11B	25.2B	0.01A		13.95
1.52 - 1.78	0.21B	31.2B	0.02A		19.45
1.78 - 2.06	0.24B	47.6B	0.02A		0
2.06 - 2.3	0.56B	33.6B	0.02A		1.72
2.3 - 2.46	0.62B	17.9B	0.02A		12.64
2.46 - 2.5					11.16
2.5 - 2.52					7.2
2.52 - 2.58					35.94
2.58 - 2.67					4.91
2.67 - 2.71					22.89
2.71 - 2.75					28.74
2.75 - 2.8					13.26
2.8 - 2.83					9.72
2.83 - 2.87					8.7
2.87 - 2.9					19.83
2.9 - 2.98					22.83
2.98 - 3.08					6.61
3.08 - 3.24					43.79
3.24 - 3.3					15.18
3.3 - 3.36					38.71
3.36 - 3.98					40.13
3.98 - 4.05					29.8
4.05 - 4.13					11.76
4.13 - 4.26					17.9
4.26 - 4.55					2.17
4.55 - 4.61					25.21
4.61 - 4.95					6.13
4.95 - 5.34					23.52
5.34 - 5.39					15.42
5.39 - 5.47					40.33
5.47 - 5.68					20.03
5.68 - 5.76					39.68
5.76 - 6					10.79

[illegible]

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2.75 - 2.8
2.8 - 2.83
2.83 - 2.87
2.87 - 2.9
2.9 - 2.98
2.98 - 3.08
3.08 - 3.24
3.24 - 3.3
3.3 - 3.36
3.36 - 3.98
3.98 - 4.05
4.05 - 4.13
4.13 - 4.26
4.26 - 4.55
4.55 - 4.61
4.61 - 4.95
4.95 - 5.34
5.34 - 5.39
5.39 - 5.47
5.47 - 5.68
5.68 - 5.76
5.76 - 6

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Laboratory Analyses Completed for this profile

15_NR	Sum of Ex. cations + Ex. acidity - Not recorded
15E1_AL	Exchangeable Al - by compulsive exchange, no pretreatment for soluble salts
15E1_CA	Exchangeable bases (Ca2+,Mg2+,Na+,K+) by compulsive exchange, no pretreatment for soluble
15E1_H	Exchangeable H - by compulsive exchange, no pretreatment for soluble salts
15E1_K	Exchangeable bases, CEC and AEC by compulsive exchange, no pretreatment for soluble salts
15E1_MG	Exchangeable bases, CEC and AEC by compulsive exchange, no pretreatment for soluble salts
15E1_NA	Exchangeable bases, CEC and AEC by compulsive exchange, no pretreatment for soluble salts
2A1	Air-dry moisture content
4B2	pH of 1:5 soil/0.01M calcium chloride extract - following Method 4A1
6B2	Total organic carbon - high frequency induction furnace, volumetric
7A2	Total nitrogen - semimicro Kjeldahl , automated colour
9A3	Total Phosphorus (ppm) - semimicro kjeldahl, automated colour
P10_GRAV	Gravel (%)
P3A1	Bulk density - g/cm3