Project Name: **BAGO-MARAGLE FOREST SOIL SURVEY**
Project Code: **BGM_FSS** **Site ID:** **0090** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (ACT)**

Site Information

Desc. By: N.J. McKenzie
Date Desc.: 15/04/96
Map Ref.: Sheet No. : 8526 DGPS
Northing/Long.: 6041559 AMG zone: 55
Easting/Lat.: 607593 Datum: AGD66
Locality:
Elevation: 1137 metres
Rainfall: No Data
Runoff: No Data
Drainage: Well drained

Geology

ExposureType: No Data
Geol. Ref.: TB
Conf. Sub. is Parent. Mat.: Probable
Substrate Material: Basalt

Land Form

Rel/Slope Class: No Data
Morph. Type: Lower-slope
Elem. Type: Hillslope
Slope: 14 %
Pattern Type: No Data
Relief: No Data
Slope Category: No Data
Aspect: 45 degrees

Surface Soil Condition (dry): Firm

Erosion:

Soil Classification

Australian Soil Classification:
Haplic Eutrophic Red Ferrosol Thick Non-gravelly Silty Clayey Very deep
Mapping Unit: N/A
Principal Profile Form: Gn4.11
ASC Confidence:
All necessary analytical data are available.
Great Soil Group: N/A

Site Disturbance: No effective disturbance other than grazing by hoofed animals

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11	0 - 0.11 m	Dark reddish brown (5YR3/2-Moist); ; Silty clay loam; Strong grade of structure, 5-10 mm, Granular; Rough-ped fabric; Dry; Firm consistence; Common cutans, 10-50% of ped faces or walls coated, faint; Field pH 6 (Raupach); Many, very fine (0-1mm) roots; Few, fine (1-2mm) roots; Common, medium (2-5mm) roots; Clear, Smooth change to -
A12	0.11 - 0.3 m	Dark reddish brown (5YR3/3-Moist); ; Light clay; Moderate grade of structure, 5-10 mm, Polyhedral; 2-5 mm, Granular; Rough-ped fabric; Moderately moist; Weak consistence; Common cutans, 10-50% of ped faces or walls coated, distinct; Field pH 5.5 (Raupach); Common, very fine (0-1mm) roots; Few, fine (1-2mm) roots; Few, medium (2-5mm) roots; Few, coarse (>5mm) roots; Gradual, Smooth change to -
B21	0.3 - 0.52 m	Dark reddish brown (2.5YR3/4-Moist); ; Light clay; Moderate grade of structure, 10-20 mm, Polyhedral; Rough-ped fabric; Moist; Weak consistence; Common cutans, 10-50% of ped faces or walls coated, distinct; Field pH 5.5 (Raupach); Common, very fine (0-1mm) roots; Few, fine (1-2mm) roots; Few, medium (2-5mm) roots; Few, coarse (>5mm) roots; Diffuse, Smooth change to -
B22	0.52 - 1.1 m	Dark reddish brown (2.5YR3/4-Moist); ; Light clay; Weak grade of structure, 20-50 mm, Polyhedral; Rough-ped fabric; Moist; Weak consistence; Common cutans, 10-50% of ped faces or walls coated, distinct; Field pH 5 (Raupach); Common, very fine (0-1mm) roots; Few, fine (1-2mm) roots; Few, medium (2-5mm) roots; Few, coarse (>5mm) roots; Diffuse, Smooth change to -
B23	1.1 - 1.65 m	Dark reddish brown (5YR3/4-Moist); ; Medium clay; Moderate grade of structure, 10-20 mm, Polyhedral; Rough-ped fabric; Moist; Firm consistence; 0-2%, medium gravelly, 6-20mm, angular, dispersed, Basalt, coarse fragments; Common cutans, 10-50% of ped faces or walls coated, distinct; Field pH 6 (Raupach); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
B23	1.65 - 2.05 m	Dark reddish brown (2.5YR3/4-Moist); ; Light medium clay; Moderate grade of structure, 10-20 mm, Polyhedral; Rough-ped fabric; Moist; Firm consistence; 0-2%, fine gravelly, 2-6mm, angular, dispersed, Basalt, coarse fragments; Common cutans, 10-50% of ped faces or walls coated, distinct; Field pH 5 (Raupach); Gradual, Smooth change to -

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B3	2.05 - 2.93 m	Dark reddish brown (2.5YR3/4-Moist); Substrate influence, 2.5YR32, 2-10% , Faint; Medium clay; Rough-ped fabric; Moist; Firm consistence; 2-10%, medium gravelly, 6-20mm, subangular tabular, dispersed, Basalt, coarse fragments; Few cutans, <10% of ped faces or walls coated, faint; Field pH 4.5 (Raupach); Clear, Smooth change to -
C	2.93 - 3 m	Reddish brown (2.5YR5/4-Moist); Substrate influence, 2.5YR34, 20-50% , Faint; Substrate influence, 7.5YR58, 20-50% , Prominent; Medium clay; Rough-ped fabric; Moist; Firm consistence; 10-20%, medium gravelly, 6-20mm, subangular tabular, dispersed, Basalt, coarse fragments; Few cutans, <10% of ped faces or walls coated, faint; Field pH 4.5 (Raupach);

Morphological Notes

A11	Stong, granular, weakly hydrophobic.
A12	Similar to 1, but not hydrophobic.
B21	Coarser grade of structure evident during sampling - mod. 50-70mm grade, polyhedral.
B22	Density increasing and still silty as per layers 1-3.
B23	Reddening decreases - texture heavier and less silty.
B23	Transitional to layer 7.
B3	Finely ground basalt in augered sample.
C	C horizon with bright yellow-brown weathered basalt.

Observation Notes

Colluvial material on lower slope. Deeper than BM089 and fertility is higher. Deep gradational profile without sharp contrasts, except for layer 8.

Site Notes

COMP 114H,BRG322 135M FR BM089,8479-1

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations				Exchangeable Acidity	CEC	ECEC	ESP
			Ca	Mg	K	Na				
m		dS/m	Cmol (+)/kg							%
0 - 0.11	4.68C		13.65H	3.41	2.31	0.15	2.2J 0K		21.72E	
0.11 - 0.3	4.61C		5.7H	2.19	1.73	0.05	2.67J 0K		12.34E	
0.3 - 0.52	4.65C		7.2H	2.67	1.45	0.07	0.97J 0K		12.37E	
0.52 - 1.1	4.5C		6.34H	2.5	1.39	0.06	1.41J 0K		11.71E	
1.1 - 1.65	4.96C		6.26H	3.42	1.69	0	0.07J 0.04K		11.48E	
1.65 - 2.05	4.86C		6.3H	4.55	2.32	0.12	0.17J 0K		13.47E	
2.05 - 2.93	4.11C		3.08H	2.7	2.29	0.13	5.08J 0K		13.28E	
2.93 - 3	3.9C		0.83H	0.91	1.32	0.1	7.42J 0K		10.58E	

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 - 0.11		8.18B		2919.3B	0.4A		0.64	35.16				
0.11 - 0.3		3.05B		2491.9B	0.17A		0.83	28.02				
0.3 - 0.52		1.21B		1434.6B	0.09A		0.97	37.36				
0.52 - 1.1		0.75B		1378.1B	0.06A		1.05	34.14				
1.1 - 1.65		0.39B		2344B	0.03A			45.25				
1.65 - 2.05		0.3B		1821.9B	0.02A			45.65				
2.05 - 2.93		0.32B		1774.3B	0.02A			39.32				
2.93 - 3		0.25B		2878.7B	0.01A			37.09				

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 - 0.11										
0.11 - 0.3										
0.3 - 0.52										
0.52 - 1.1										
1.1 - 1.65										
1.65 - 2.05										
2.05 - 2.93										
2.93 - 3										

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Laboratory Analyses Completed for this profile

13C1_AL	Citrate/dithionite-extractable iron, aluminium, Manganese and Silicon
13C1_FE	Citrate/dithionite-extractable iron, aluminium, Manganese and Silicon
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