Project Name: **BAGO-MARAGLE FOREST SOIL SURVEY**
Project Code: **BGM_FSS** **Site ID:** **0112** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (ACT)**

Site Information

Desc. By:	P. Ryan	**Locality:**	
Date Desc.:	24/04/96	**Elevation:**	1192 metres
Map Ref.:	Sheet No. : 8526 DGPS	**Rainfall:**	No Data
Northing/Long.:	6056089 AMG zone: 55	**Runoff:**	No Data
Easting/Lat.:	608739 Datum: AGD66	**Drainage:**	Well drained

Geology

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

Land Form

Rel/Slope Class:	No Data	**Pattern Type:**	No Data
Morph. Type:	Crest	**Relief:**	No Data
Elem. Type:	Hillcrest	**Slope Category:**	No Data
Slope:	2 %	**Aspect:**	No Data

Surface Soil Condition (dry): Firm

Erosion:

Soil Classification

Australian Soil Classification:
Humose-Acidic Dystrophic Red Ferrosol Medium Slightly gravelly Clayey Clayey Deep

Mapping Unit: N/A
Principal Profile Form: Uf5.31

ASC Confidence:
All necessary analytical data are available.

Great Soil Group: Krasnozem

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

Vegetation:

Surface Coarse Fragments:

Profile Morphology

O1	0 - 0.02 m	Organic Layer; ;
A1f	0.02 - 0.15 m	(2.5YR2.5/2-Moist); Biological mixing, 5YR33, 2-10% , Faint; Light clay; Strong grade of structure, 2-5 mm, Polyhedral; 5-10 mm, Polyhedral; Rough-ped fabric; Moist; Weak consistence; 0-2%, fine gravelly, 2-6mm, subangular tabular, Coal, coarse fragments; Field pH 4.5 (Raupach); Common, very fine (0-1mm) roots; Common, fine (1-2mm) roots; Common, medium (2-5mm) roots; Common, coarse (>5mm) roots; Gradual, Irregular change to -
A3f	0.15 - 0.29 m	Dusky red (2.5YR3/2-Moist); Biological mixing, 5YR2.52, 10-20% , Faint; Biological mixing, 5YR33, 2-10% , Faint; Silty clay; Strong grade of structure, 2-5 mm, Polyhedral; 5-10 mm, Polyhedral; Smooth-ped fabric; Moist; Firm consistence; 2-10%, fine gravelly, 2-6mm, subangular tabular, Coal, coarse fragments; 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; Gradual, Irregular change to -
B1	0.29 - 0.41 m	Dark reddish brown (2.5YR3/3-Moist); Biological mixing, 5YR32, 2-10% , Faint; Silty clay; Moderate grade of structure, 5-10 mm, Polyhedral; 10-20 mm, Subangular blocky; Smooth-ped fabric; Moist; Firm consistence; Common cutans, 10-50% of ped faces or walls coated, faint; Field pH 5 (Raupach); Few, very fine (0-1mm) roots; Few, fine (1-2mm) roots; Gradual, Wavy change to -
B21	0.41 - 0.59 m	Dark reddish brown (2.5YR3/4-Moist); Biological mixing, 5YR32, 2-10% , Faint; Silty clay; Moderate grade of structure, 5-10 mm, Polyhedral; 10-20 mm, Subangular blocky; Smooth-ped fabric; Moist; Firm consistence; Few cutans, <10% of ped faces or walls coated, faint; Field pH 4.5 (Raupach); Common, very fine (0-1mm) roots; Few, fine (1-2mm) roots; Few, medium (2-5mm) roots; Common, coarse (>5mm) roots; Diffuse, Wavy change to -
B22	0.59 - 0.96 m	Dark red (2.5YR3/6-Moist); ; Light medium clay; Moderate grade of structure, 5-10 mm, Polyhedral; 2-5 mm, Polyhedral; Smooth-ped fabric; Moist; Firm consistence; Common cutans, 10-50% of ped faces or walls coated, faint; Field pH 4.5 (Raupach); Few, very fine (0-1mm) roots; Gradual, Irregular change to -
B3	0.96 - 1.37 m	Dark reddish brown (5YR3/4-Moist); ; Light medium clay; Weak grade of structure, 5-10 mm, Polyhedral; Rough-ped fabric; Moist; 10-20%, fine gravelly, 2-6mm, subangular, Basalt, coarse fragments; Few cutans, <10% of ped faces or walls coated, faint; Field pH 4.5 (Raupach); Gradual change to -

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BC	1.37 - 1.77 m	Reddish brown (5YR4/4-Moist); Substrate influence, 10YR54, 10-20% , Distinct; Silty clay loam; Massive grade of structure; Earthy fabric; Moderately moist; Firm consistence; 10-20%, fine gravelly, 2-6mm, subangular, Basalt, coarse fragments; Few (2 - 10 %), Manganiferous, Medium (2 -6 mm), Nodules, weak, segregations;Few (2 - 10 %), Manganiferous, Medium (2 -6 mm), Fragments, weak, segregations;Field pH 4.5 (Raupach); Clear change to -
C	1.77 - 2.57 m	Yellowish brown (10YR5/4-Moist); Substrate influence, 10YR51, 10-20% , Distinct; Substrate influence, 10YR56, 2-10% , Faint; Loam; Massive grade of structure; Earthy fabric; Moderately moist; Weak consistence; 10-20%, fine gravelly, 2-6mm, subangular, Basalt, coarse fragments; Few (2 - 10 %), Manganiferous, Medium (2 -6 mm), Nodules, strong, segregations;Few (2 - 10 %), Manganiferous, Medium (2 -6 mm), Fragments, strong, segregations;Field pH 4 (Raupach);

Morphological Notes

A1f	Strong pedality due to casting.
A3f	Strong pedality due to casting.
B3	First contact with fine basaltic gravel.
BC	Some gravel has appearance of tuffaceous material.
C	Auger hit unweathered rock.

Observation Notes

Top of basalt hill covered in blackberries. Slopes were gravelly. Very high worm population.

Site Notes

19H,1349-1,240M 186D FR RD JN BLACKBER

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations				Exchangeable	CEC	ECEC	ESP
			Ca	Mg	K	Na	Acidity			
m		dS/m	Cmol (+)/kg							%
0 - 0.02										
0.02 - 0.15	4.29C		12.21H	4.02	1.3	0.13	7.17J 0K		24.83E	
0.15 - 0.29	4.53C		6.16H	2.62	0.76	0.17	4.06J 0K		13.77E	
0.29 - 0.41	4.22C		1.67H	1.12	0.39	0.17	6J 0K		9.36E	
0.41 - 0.59	4.12C		0.76H	0.76	0.59	0.13	6.36J 0K		8.6E	
0.59 - 0.96	4.07C		0.36H	0.28	0.49	0.08	6.27J 0K		7.48E	
0.96 - 1.37	4.05C		0.04H	0.27	0.12	0.2	5.78J 0K		6.41E	
1.37 - 1.77	4.1C		0H	0.31	0.06	0.38	4.61J 0K		5.36E	
1.77 - 2.57	4.13C		0H	0.27	0.08	0.52	3.41J 0K		4.28E	

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 - 0.02												
0.02 - 0.15		15.21B		1249.2B	0.45A		0.47	49.12				
0.15 - 0.29		6.11B		1181B	0.24A		0.72	43.05				
0.29 - 0.41		3.5B		934.6B	0.13A			36.09				
0.41 - 0.59		2.25B		926.1B	0.08A		0.90	33.32				
0.59 - 0.96		1.23B		876.3B	0.03A		0.98	31.6				
0.96 - 1.37		0.77B		1360.6B	0.01A			31.93				
1.37 - 1.77		0.48B		2151.6B	0A			33.95				
1.77 - 2.57		0.22B		2650.7B	0A			27				

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 - 0.02										
0.02 - 0.15										
0.15 - 0.29										
0.29 - 0.41										
0.41 - 0.59										
0.59 - 0.96										
0.96 - 1.37										
1.37 - 1.77										
1.77 - 2.57										

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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