Project Name: **BAGO-MARAGLE ESM**
Project Code: **BGM_ESM** **Site ID:** **1007** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (ACT)**

Site Information

Desc. By: P. Ryan
Date Desc.: 15/12/94
Map Ref.: Sheet No. : 8526 DGPS
Northing/Long.: 6055054 AMG zone: 55
Easting/Lat.: 606824 Datum: AGD66
Locality:
Elevation: 1259 metres
Rainfall: No Data
Runoff: Very slow
Drainage: Imperfectly drained

Geology

ExposureType: Soil pit
Geol. Ref.: TB
Conf. Sub. is Parent. Mat.: No Data
Substrate Material: Sand

Land Form

Rel/Slope Class: No Data
Morph. Type: Crest
Elem. Type: Hillcrest
Slope: 4 %
Pattern Type: No Data
Relief: No Data
Slope Category: No Data
Aspect: 270 degrees

Surface Soil Condition (dry): Self-mulching

Erosion:

Soil Classification

Australian Soil Classification:
Humose-Acidic Mesotrophic Red Dermosol Thin Non-gravelly Clayey Clayey Very deep
Mapping Unit: N/A
Principal Profile Form: Uf6.31
ASC Confidence:
All necessary analytical data are available.
Great Soil Group: Krasnozem

Site Disturbance: No effective disturbance. Natural

Vegetation:

Surface Coarse Fragments:

Profile Morphology

O1	0 - 0.03 m	Organic Layer; ;
A1	0.03 - 0.11 m	Dark reddish brown (5YR2.5/2-Moist); ; Light clay; Strong grade of structure, 2-5 mm, Polyhedral; Smooth-ped fabric; Moderately moist; Weak consistence; Moderately plastic; Non-sticky; Very few (0 - 2 %), Ferromanganiferous, Medium (2 -6 mm), Nodules, strong, segregations;Field pH 5.5 (pH meter); Many, very fine (0-1mm) roots; Common, fine (1-2mm) roots; Common, medium (2-5mm) roots; Few, coarse (>5mm) roots; Abrupt, Smooth change to -
A3	0.11 - 0.23 m	Dark reddish brown (5YR3/3-Moist); Biological mixing, 2-10% , Faint; Light clay; Strong grade of structure, 5-10 mm, Polyhedral; 100-200 mm, Lenticular; Smooth-ped fabric; Moderately moist; Weak consistence; Moderately plastic; Slightly sticky; Few cutans, <10% of ped faces or walls coated, faint; Very few (0 - 2 %), Ferromanganiferous, Medium (2 -6 mm), Nodules, strong, segregations;Field pH 5.5 (pH meter); Common, very fine (0-1mm) roots; Common, fine (1-2mm) roots; Clear, Wavy change to -
B21	0.23 - 0.77 m	Dark reddish brown (5YR3/4-Moist); Biological mixing, 2-10% , Distinct; Light clay; Strong grade of structure, 5-10 mm, Polyhedral; 100-200 mm, Lenticular; Smooth-ped fabric; Moist; Weak consistence; Moderately plastic; Slightly sticky; 2-10%, medium gravelly, 6-20mm, subrounded, dispersed, Tuff, coarse fragments; Common cutans, 10-50% of ped faces or walls coated, distinct; Very few (0 - 2 %), Manganiferous, Medium (2 -6 mm), Soft segregations, weak, segregations;Field pH 5 (pH meter); Few, very fine (0-1mm) roots; Few, fine (1-2mm) roots; Abrupt, Wavy change to -
B22	0.77 - 1.13 m	Yellowish red (5YR4/6-Moist); Biological mixing, 0-2% , Distinct; Light clay; Moderate grade of structure, 10-20 mm, Subangular blocky; 100-200 mm, Lenticular; Smooth-ped fabric; Moist; Weak consistence; Moderately plastic; Slightly sticky; 20-50%, medium gravelly, 6-20mm, subrounded, dispersed, Tuff, coarse fragments; Few cutans, <10% of ped faces or walls coated, faint; Few (2 - 10 %), Manganiferous, Medium (2 -6 mm), Soft segregations, weak, segregations;Field pH 4.5 (pH meter); Few, very fine (0-1mm) roots;
2B31	1.13 - 1.63 m	Greyish brown (10YR5/2-Moist); Substrate influence, 10-20% , Distinct; Substrate influence, 2-10% , Prominent; Light clay; Moderately moist; Moderately plastic; Slightly sticky; Few (2 - 10 %), Ferruginous, Medium (2 -6 mm), Soft segregations, weak, segregations;Field pH 4.5 (pH meter);

Project Name: **BAGO-MARAGLE ESM**
Project Code: **BGM_ESM** **Site ID:** **1007** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (ACT)**

2B32	1.63 - 1.93 m	Grey (2.5Y6/1-Moist); Substrate influence, 10-20% , Distinct; Substrate influence, 2-10% , Distinct; Clay loam, sandy; Moist; Moderately plastic; Moderately sticky; Common (10 - 20 %), Ferromanganiferous, Coarse (6 - 20 mm), Soft segregations, weak, segregations;Field pH 4.5 (pH meter);
2C11	1.93 - 2.13 m	Olive yellow (2.5Y6/6-Moist); Substrate influence, 2-10% , Distinct; Coarse sandy clay loam; Moderately moist; Slightly plastic; Slightly sticky; 10-20%, medium gravelly, 6-20mm, subrounded tabular, stratified, Tuff, coarse fragments; Field pH 5 (pH meter);
2C12	2.13 - 2.23 m	Yellowish brown (10YR5/8-Moist); Substrate influence, 10-20% , Prominent; Substrate influence, 2-10% , Faint; Coarse sandy clay loam; Moderately moist; Slightly plastic; Slightly sticky; Few (2 - 10 %), Ferruginous, Medium (2 -6 mm), Soft segregations, weak, segregations;Field pH 4.5 (pH meter);
2C13	2.23 - 2.53 m	Grey (10YR6/1-Moist); Substrate influence, 10-20% , Prominent; Substrate influence, 10-20% , Distinct; Coarse sandy clay loam; Moderately moist; Moderately plastic; Slightly sticky; Field pH 4.5 (pH meter);
2C2	2.53 - 3.13 m	Brown (10YR4/3-Moist); Substrate influence, 2-10% , Distinct; Substrate influence, 2-10% , Faint; Light clay; Moist; Moderately plastic; Moderately sticky; Few (2 - 10 %), Manganiferous, Coarse (6 - 20 mm), Soft segregations, weak, segregations;Few (2 - 10 %), Manganiferous, Coarse (6 - 20 mm), Veins, weak, segregations;Field pH 4.5 (pH meter);
3D1	3.13 - 3.43 m	Brownish yellow (10YR6/6-Moist); Substrate influence, 2-10% , Faint; Sandy loam; Wet; Slightly plastic; Slightly sticky; Few (2 - 10 %), Manganiferous, Medium (2 -6 mm), Soft segregations, weak, segregations;Field pH 5 (pH meter);
3D2	3.43 - 4.13 m	Brown (7.5YR5/4-Moist); Substrate influence, 10-20% , Distinct; Substrate influence, 10-20% , Distinct; Silty clay loam; Moist; Moderately plastic; Slightly sticky; Few (2 - 10 %), Manganiferous, Medium (2 -6 mm), Soft segregations, weak, segregations;Field pH 5 (pH meter);

Morphological Notes

B22	Coarse fragments increase dramatically. Origin is possibly lapillae tuff.
2B31	Distinct clasts of clear quartz in fine matrixes. Some gaseous vesicles. Mottling suggests anaerobic conditions.
2B32	Same as layer 5.
2C11	Gleying disappears clear quartz clasts in fine matrixes.
2C12	Gley mottle increases.
2C13	Same as 8.
2C2	Distinct colour change to dark brown with some mottling. Parent material may be
3D1	Watertable encountered at 3.1m. Would seem to be restricted within sandy layer. This layer is interpreted as the top of the tertiary sediments.
3D2	Finely layered lacustrine sediments.

Observation Notes

Tertiary basalt plateau. West side of trial. Basalt overlays pyroclastic to 3.1m. Below 3.1m are tertiary sediments.Perched watertable within sandy sedimen-ts from 3.1 to 3.2m.

Site Notes

VI/1.14, ALPINE ASH GROWHT PLOT NO.1

Project Name: BAGO-MARAGLE ESM
Project Code: BGM_ESM **Site ID:** 1007 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (ACT)

Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations				Exchangeable	CEC	ECEC	ESP
			Ca	Mg	K	Na	Acidity			
m		dS/m	Cmol (+)/kg							%
0.03 - 0.11	4.45C		7.84H	3.74	2.47	0.27	2.82J		17.14E	
	5.21A						0K			
0.03 - 0.23										
0.13 - 0.23	4.28C		1.76H	1.73	0.8	0.2	3.22J		7.71E	
	5.13A						0K			
0.3 - 0.5										
0.33 - 0.41	4.05C		0.71H	0.86	0.38	0.17	4.53J		6.66E	
	4.92A						0K			
0.7 - 0.9										
0.93 - 1.03	3.79C		0.19H	0.55	0.27	0.19	7.89J		9.09E	
	4.81A						0K			
1.33 - 1.53	3.7C		0.08H	0.36	0.24	0.22	7.02J		7.92E	
	4.86A						0K			
1.93 - 2.13	3.66C		0.07H	0.24	0.31	0.15	5.6J		6.37E	
	4.66A						0K			
2.28 - 2.53	3.61C		0.08H	0.33	0.34	0.29	8.69J		9.74E	
	4.6A						0K			
2.68 - 2.93	3.64C		0.2H	0.73	0.24	0.32	13.17J		14.67E	
	4.66A						0K			
3.13 - 3.33	3.75C		0.14H	0.37	0.21	0.13	3.84J		4.7E	
	4.75A						0K			
3.48 - 3.73	3.69C		0.24H	0.71	0.44	0.31	7.76J		9.46E	
	4.66A						0K			

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			%		
0.03 - 0.11		11.28B		1327.6B	0.48A		0.69	26.09				
0.03 - 0.23							0.86					
							0.78					
							0.84					
0.13 - 0.23		4.51B		1100B	0.19A		0.96	11.2				
0.3 - 0.5							0.92					
							1.01					
							1.10					
0.33 - 0.41		2.49B		1118.4B	0.12A		1.07	2.2				
0.7 - 0.9							1.15					
							1.11					
							1.05					
0.93 - 1.03		0.69B		1382.7B	0.04A		1.19	30.66				
1.33 - 1.53		0.19B		1343.2B	0.01A			13.31				
1.93 - 2.13		0.08B		781.2B	0.01A			47.76				
2.28 - 2.53		0.15B		1882.8B	0.01A			11.66				
2.68 - 2.93		0.07B		2272.6B	0A			2.61				
3.13 - 3.33		0.05B		736.2B	0A			3.89				
3.48 - 3.73		0.08B		1905B	0A			7.01				

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

Project Name: **BAGO-MARAGLE ESM**
Project Code: **BGM_ESM** **Site ID:** **1007** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (ACT)**

0.03 - 0.11							
0.03 - 0.23	0.51E	0.47E	0.31E	0.26F	0.24F	1591D	398B
	0.5E	0.47E	0.26E	0.22F	0.19F	3305D	202B
	0.51E	0.47E	0.33E	0.27F	0.22F	773D	86B
0.13 - 0.23							
0.3 - 0.5	0.51E	0.46E	0.29E	0.22F	0.19F	242D	45B
	0.5E	0.46E	0.29E	0.23F	0.2F	132D	71B
	0.5E	0.46E	0.32E	0.27F	0.23F	40D	29B
0.33 - 0.41							
0.7 - 0.9	0.46E	0.43E	0.3E	0.24F	0.21F	126D	51B
	0.5E	0.47E	0.3E	0.25F	0.22F	79D	31B
	0.45E	0.42E	0.29E	0.24F	0.21F	745D	23B
0.93 - 1.03							
1.33 - 1.53							
1.93 - 2.13							
2.28 - 2.53							
2.68 - 2.93							
3.13 - 3.33							
3.48 - 3.73							

Project Name: **BAGO-MARAGLE ESM**
Project Code: **BGM_ESM** **Site ID:** **1007** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (ACT)**

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
4A1	pH of 1:5 soil/water suspension
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
P3B2VL_1	1 BAR Moisture m3/m3 - Volumetric using disturbed sample on pressure plate
P3B2VL_15	15 BAR Moisture m3/m3 - Volumetric using disturbed sample on pressure plate
P3B2VL_5	5 BAR Moisture m3/m3 - Volumetric using disturbed sample on pressure plate
P3B3VLb001	0.01 BAR Moisture m3/m3 - Volumetric using undisturbed 73mm diameter and 75mm height core on suction plate taken from center of large core (CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996)
P3B3VLb005	0.05 BAR Moisture m3/m3 - Volumetric using undisturbed 73mm diameter and 75mm height core on suction plate taken from center of large core (CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996)
P3B3VLb01	0.1 BAR Moisture m3/m3 - Volumetric using undisturbed 73mm diameter and 75mm height core on suction plate taken from center of large core (CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996)
P3B3VLb06	0.66 BAR Moisture m3/m3 - Volumetric using undisturbed 73mm diameter and 75mm height core on suction plate taken from center of large core (CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996)
P4_100DMcK	Unsaturated Hydraulic Conductivity - 100mm potential - Using disk permeameter with method CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996
P4_10DMcK	Unsaturated Hydraulic Conductivity - 10mm potential - Using disk permeameter with method CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996
P4_50DMcK	Unsaturated Hydraulic Conductivity - 50mm potential - Using disk permeameter with method CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996
P4_sat_McK	Saturated Hydraulic Conductivity (CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996)