

**Project Name:** BAGO-MARAGLE FOREST SOIL SURVEY  
**Project Code:** BGM\_FSS **Site ID:** 0153 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (ACT)

#### Site Information

<b>Desc. By:</b> P. Ryan	<b>Locality:</b>
<b>Date Desc.:</b> 07/04/97	<b>Elevation:</b> 1161 metres
<b>Map Ref.:</b> Sheet No. : 8526 DGPS	<b>Rainfall:</b> No Data
<b>Northing/Long.:</b> 6040130 AMG zone: 55	<b>Runoff:</b> No Data
<b>Easting/Lat.:</b> 611810 Datum: AGD66	<b>Drainage:</b> Very poorly drained

#### Geology

<b>ExposureType:</b> Undisturbed soil core	<b>Conf. Sub. is Parent. Mat.:</b> No Data
<b>Geol. Ref.:</b> Tb	<b>Substrate Material:</b> Granodiorite

#### Land Form

<b>Rel/Slope Class:</b> No Data	<b>Pattern Type:</b> No Data
<b>Morph. Type:</b> Flat	<b>Relief:</b> No Data
<b>Elem. Type:</b> Valley flat	<b>Slope Category:</b> No Data
<b>Slope:</b> 1 %	<b>Aspect:</b> 270 degrees

**Surface Soil Condition (dry):** Firm

#### Erosion:

#### Soil Classification

<b>Australian Soil Classification:</b>	<b>Mapping Unit:</b> N/A
Melacic Kandosolic Redoxic Hydrosol Very thick Non-gravelly Clayey Clayey Very deep	<b>Principal Profile Form:</b> Gn2.81
<b>ASC Confidence:</b>	<b>Great Soil Group:</b> Wiesenboden

All necessary analytical data are available.

**Site Disturbance:** No effective disturbance. Natural

#### Vegetation:

#### Surface Coarse Fragments:

#### Profile Morphology

O1	0 - 0.04 m	Organic Layer; ;
A11	0.04 - 0.27 m	Very dark grey (10YR3/1-Moist); ; Silty clay loam (Sapric); Moderate grade of structure, 5-10 mm, Angular blocky; Rough-ped fabric; Moist; Weak consistence; Field pH 4 (Raupach); Many, very fine (0-1mm) roots; Many, fine (1-2mm) roots; Clear change to -
A12	0.27 - 0.54 m	Very dark grey (10YR3/1-Moist); Substrate influence, 10YR34, 2-10% , Faint; Silty clay; Moderate grade of structure, 5-10 mm, Angular blocky; Rough-ped fabric; Moist; Weak consistence; Field pH 4 (Raupach); Common, very fine (0-1mm) roots; Many, fine (1-2mm) roots; Gradual change to -
A13	0.54 - 0.86 m	Very dark grey (2.5Y3/1-Moist); Substrate influence, 10YR34, 2-10% , Faint; Silty clay; Moderate grade of structure, 5-10 mm, Subangular blocky; 2-5 mm, Polyhedral; Smooth-ped fabric; Moist; Firm consistence; Few cutans, <10% of ped faces or walls coated, faint; Few (2 - 10 %), Ferruginous, Fine (0 - 2 mm), Root linings; Field pH 4 (Raupach); Common, very fine (0-1mm) roots; Many, fine (1-2mm) roots; Clear change to -
B1	0.86 - 1.12 m	Dark grey (2.5Y4/1-Moist); ; Light medium clay; Massive grade of structure; Earthy fabric; Wet; Firm consistence; Very few (0 - 2 %), Ferruginous, Fine (0 - 2 mm), Root linings; Field pH 4.5 (Raupach); Common, very fine (0-1mm) roots; Common, fine (1-2mm) roots; Abrupt change to -
B21	1.12 - 1.57 m	Grey (2.5Y6/1-Moist); Substrate influence, 10YR56, 2-10% , Faint; Light medium clay; Massive grade of structure; Earthy fabric; Wet; Firm consistence; Common (10 - 20 %), Ferruginous, Medium (2 -6 mm), Root linings; Field pH 6 (Raupach); Few, very fine (0-1mm) roots; Few, fine (1-2mm) roots; Abrupt change to -
B22	1.57 - 1.75 m	Light olive brown (2.5Y5/6-Moist); Substrate influence, 5B61, 10-20% , Distinct; Medium sandy clay; Weak grade of structure, 10-20 mm, Prismatic; Smooth-ped fabric; Wet; Firm consistence; Few cutans, <10% of ped faces or walls coated, faint; Few (2 - 10 %), Ferruginous, Fine (0 - 2 mm), Root linings; Field pH 6.5 (Raupach); Few, very fine (0-1mm) roots; Gradual change to -
B23	1.75 - 1.88 m	Bluish grey (5B6/1-Moist); Substrate influence, 5Y54, 2-10% , Faint; Light clay; Massive grade of structure, 5-10 mm; Earthy fabric; Wet; Firm consistence; Field pH 6 (Raupach); Few, very fine (0-1mm) roots; Diffuse change to -

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B31	1.88 - 2.36 m	Yellowish brown (10YR5/8-Moist); Substrate influence, 2.5Y52, 0-2% , Faint; Clay loam; Massive grade of structure, 5-10 mm, Angular blocky; Earthy fabric; Moist; Firm consistence; Field pH 6 (Raupach); Clear change to -
2C1	2.36 - 2.46 m	; Clayey coarse sand; Massive grade of structure, 5-10 mm; Sandy (grains prominent) fabric; Moderately moist; Very weak consistence; Field pH 7.5 (Raupach); Abrupt change to -
2C2	2.46 - 3.29 m	; Loamy coarse sand; Massive grade of structure; Sandy (grains prominent) fabric; Moderately moist; Very weak consistence; Field pH 8.5 (Raupach);

**Morphological Notes**

A11	Humic rich horizon.
A12	Less OM
A13	Increasing Fe root stains
B1	Still OM rich but more clay.
B21	Abrupt change to pale B2 horizon.
B22	Increased sand mica is common with Fe stained root channels.
B23	More rock like fabric
B31	Increased Fe - colouring
2C1	Loose granodiorite grus - strongly ferruginised.
2C2	Granodiorite grus - less red.

**Observation Notes**

Adjacent to drainage line draining east into McPherson's Plain proper. Site is west of boundary fence. Cattle puddling of surface would normally be saturated.

**Site Notes**

MCPHERSON'S PLAIN-WESTERN POWERLINE RD

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**Laboratory Test Results:**

Depth	pH	1:5 EC	Ca	Exchangeable Cations		Exchangeable	CEC	ECEC	ESP
m		dS/m		Mg	K	Na	Acidity		%
						Cmol	(+)/kg		
0 - 0.04									
0.04 - 0.27	3.86C		0.93H	0.92	0.12	0	6.28J 0K	8.25E	
0.27 - 0.54	3.88C		0.92H	0.91	0.12	0	6.55J 0K	8.49E	
0.54 - 0.86	3.95C		1.43H	1.26	0.23	0	5.22J 0K	8.15E	
0.86 - 1.12	3.96C		1.44H	1.37	0.21	0	5.05J 0K	8.07E	
1.12 - 1.57	4.91C		3.96H	3.46	0.3	0	0.03J 0.3K	8.05E	
1.57 - 1.75	5.35C		3.65H	2.72	0.22	0.02	0J 0.2K	6.81E	
1.75 - 1.88	4.87C		3.03H	2.14	0.24	0	0.06J 0.32K	5.79E	
1.88 - 2.36	5.56C		3.87H	1.96	0.22	0	0J 0.16K	6.21E	
2.36 - 2.46	5.88C		3.01H	1.48	0.22	0	0J 0.11K	4.83E	
2.46 - 3.29	6.03C		2.99H	1.53	0.26	0	0J 0.35K	5.13E	

Depth  m	CaCO3  %	Organic C  %	Avail. P  mg/kg	Total P  %	Total N  %	Total K  %	Bulk Density  Mg/m3	Particle		Size FS %	Analysis	
								GV	CS		Silt	Clay
0 - 0.04												
0.04 - 0.27		2.78B		1248.2B	0.18A		0.76	4.61				
0.27 - 0.54		2.05B		1661.4B	0.14A		1.32	7.26				
0.54 - 0.86		2B		2073.9B	0.13A		0.67	7.41				
0.86 - 1.12		1.91B		1548.8B	0.11A			7.27				
1.12 - 1.57		0.34B		485.4B	0.02A			23.39				
1.57 - 1.75		0.29B		409.3B	0.01A			10.54				
1.75 - 1.88		0.14B		438.3B	0.01A			3.14				
1.88 - 2.36		0.07B		1723.8B	0.01A			3.94				
2.36 - 2.46		0.15B		774.7B	0.01A			7.49				
2.46 - 3.29		0.02B		426B	0.01A			4.17				

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2.46 - 3.29

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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