

Project Name: Soil Studies in the Lower Namoi Valley
Project Code: EDGEROI **Site ID:** ed002 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By:	D. McGarry	Locality:	Twynam Pastoral Co., Boolcarrol
Date Desc.:	21/05/85	Elevation:	187 metres
Map Ref.:	Sheet No. : 8837_N 1:50000	Rainfall:	No Data
Northing/Long.:	6677800 AMG zone: 55	Runoff:	No Data
Easting/Lat.:	744550 Datum: AGD66	Drainage:	No Data

Geology

ExposureType:	Undisturbed soil core	Conf. Sub. is Parent. Mat.:	No Data
Geol. Ref.:	No Data	Substrate Material:	No Data

Land Form

Rel/Slope Class:	No Data	Pattern Type:	Flood plain
Morph. Type:	No Data	Relief:	No Data
Elem. Type:	No Data	Slope Category:	Level
Slope:	0 %	Aspect:	No Data

Surface Soil Condition (dry): Self-mulching, Poached

Erosion:

Soil Classification

Australian Soil Classification:	N/A	Mapping Unit:	N/A
ASC Confidence:	Confidence level not specified	Principal Profile Form:	Ug5.15
		Great Soil Group:	Grey clay

Site Disturbance: Complete clearing. Pasture, native or improved, cultivated at some stage

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11	0 - 0.1 m	Very dark greyish brown (10YR3/2-Moist); ; Medium heavy clay; Moderate grade of structure, 20-50 mm, Subangular blocky; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; Field pH 6.8 (pH meter); Common, fine (1-2mm) roots;
A12	0.1 - 0.25 m	Very dark greyish brown (10YR3/2-Moist); ; Medium heavy clay; Moderate grade of structure, 10-20 mm, Subangular blocky; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Field pH 7.5 (pH meter); Few, fine (1-2mm) roots;
A13	0.25 - 0.5 m	Very dark greyish brown (10YR3/2-Moist); ; Medium heavy clay; Strong grade of structure, 10-20 mm, Angular blocky; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Field pH 8 (pH meter); Few, very fine (0-1mm) roots; Gradual, Smooth change to -
A14	0.5 - 0.95 m	Very dark greyish brown (10YR3/2-Moist); , 10YR71, 0-2% , 0-5mm, Distinct; Medium heavy clay; Weak grade of structure, 20-50 mm, Lenticular; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Gradual, Smooth change to -
A15	0.95 - 1.4 m	Brown (7.5YR4/4-Moist); , 7.5YR32, 10-20% , 15-30mm, Distinct; , 10YR84, 0-2% , 0-5mm, Distinct; Light medium clay; Weak grade of structure, 20-50 mm, Subangular blocky; Smooth-ped fabric; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Weak consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.2 (pH meter); Few, very fine (0-1mm) roots; Gradual, Smooth change to -
B2	1.4 - 3.39 m	Reddish brown (5YR4/3-Moist); , N30, 0-2% , 0-5mm, Distinct; , 5YR56, 0-2% , 0-5mm, Distinct; Light medium clay; Strong grade of structure, 20-50 mm, Lenticular; Strong grade of structure, 10-20 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Weak consistence; Field pH 8.2 (pH meter)

Morphological Notes

A11 Ao of 2cm is present. Crackdepth is 90cm. This is a typical profile of wet conditions, i.e. ponded for some time each year. Boundary between A/B is at 36cm. The highly developed structure of the B2 may indicate a prior soil. However, the AB

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A12 boundary is gradual, not sharp. The B2 elsewhere has been called B2b, but not here.
A14 differentiated on basis of upper levels having better structure.

Observation Notes

Parent Rock: alluvial sediment, clay, floodplain

Site Notes

Hand pen with big tip: shear measurements influenced by well developed mat of roots. Some incipient gilgai. >50% ground cover with wireweed.

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations			Exchangeable	CEC	ECEC	ESP
m		dS/m	Ca	Mg	K	Na	Acidity		%
						Cmol (+)/kg			
0 - 0.02	7.17A	0.156A	18.59B	14.08	2.3	1.82			
0 - 0.1	7.38A	0.128A	19.22B	24.41	2.06	2.45			
0.1 - 0.2	8.48A	0.1A	22.48B	16.28	1.49	3.6			
0.3 - 0.4	9.15A	0.193A	24.86B	13.22	1.24	7.06			
0.7 - 0.8		<0.1A	15.23B	15.38	0.57	1.83			
1.2 - 1.3	8.67A	1.013A	23.14B	22.44	1.52	10.17			
2.5 - 2.6	9.19A	0.702A	20.43B	24.22	1.07	9.01			

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Laboratory Analyses Completed for this profile

15A2_CA	Exchangeable bases (Ca ²⁺ ,Mg ²⁺ ,Na ⁺ ,K ⁺) - 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_K	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_MG	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_NA	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
19B1	Carbonates - manometric
3A1	EC of 1:5 soil/water extract
4A1	pH of 1:5 soil/water suspension
5A2	Chloride - 1:5 soil/water extract, automated colour
6B3	Total organic carbon - high frequency induction furnace, infrared
7B1	Water soluble nitrate - automated colour
9B1	Bicarbonate-extractable phosphorus - manual colour
P10_CF_C	Clay (%) - Coventry and Fett pipette method
P10_CF_Z	Silt (%) - Coventry and Fett pipette method