

Project Name: Preliminary Assessment and Survey of Land Degradation in the Dalrymple Shire, QLD
Project Code: DLR **Site ID:** T550 **Observation ID:** 1
Agency Name: QLD Department of Primary Industries

Site Information

Desc. By: M.G. Cannon	Locality:
Date Desc.: 03/03/92	Elevation: 306 metres
Map Ref.: Sheet No. : 8156 GPS	Rainfall: No Data
Northing/Long.: 7719304 AMG zone: 55	Runoff: Moderately rapid
Easting/Lat.: 439424 Datum: AGD66	Drainage: Poorly drained

Geology

Exposure Type: No Data	Conf. Sub. is Parent. Mat.: No Data
Geol. Ref.: Tf	Substrate Material: Undisturbed soil core, No Data

Land Form

Rel/Slope Class: Level plain <9m <1%	Pattern Type: Plain
Morph. Type: Flat	Relief: No Data
Elem. Type: Plain	Slope Category: Level
Slope: <1 %	Aspect: No Data

Surface Soil Condition (dry): Cracking, Surface crust

Erosion: 3 m, 90 m;

Soil Classification

Australian Soil Classification:	Mapping Unit: N/A
Endocalcareous Crusty Brown Vertosol Gravelly Fine Medium fine Very deep	Principal Profile Form: Ug5.34
ASC Confidence:	Great Soil Group: Brown clay

All necessary analytical data are available.

Site Disturbance: Limited clearing, for example selective logging

Vegetation: Low Strata - Tussock grass, 0.51-1m, Sparse. *Species includes - Bothriochloa decipiens, Chrysopogon fallax, Aristida species Mid Strata - Tree, 3.01-6m, Sparse. *Species includes - Terminalia oblongata, Bursaria incana, Atalaya hemiglaucia

Tall Strata - Tree, 6.01-12m, Mid-dense. *Species includes - Acacia argyrodendron, Eucalyptus coolibah

Surface Coarse Fragments: 10-20%, medium gravelly, 6-20mm, subrounded, Quartzite

Profile Morphology

A11	0 - 0.02 m	Brown (10YR4/3-Moist); ; Light clay; Moderate grade of structure, <2 mm, Platy; Smooth-ped fabric; Dry; Strong consistence; 2-10%, fine gravelly, 2-6mm, subrounded, dispersed, Quartzite, coarse fragments; , Calcareous, , , , Gypseous, , ; Field pH 8.5 (Raupach, 0.01); Common, very fine (0-1mm) roots; Abrupt, Wavy change to -
A12	0.02 - 0.22 m	Dark greyish brown (2.5Y4/3-Moist); ; Medium heavy clay; Strong grade of structure, 10-20 mm, Subangular blocky; Moderate grade of structure, 5-10 mm, Subangular blocky; Smooth-ped fabric; Dry; Very strong consistence; 2-10%, fine gravelly, 2-6mm, subrounded, dispersed, Quartzite, coarse fragments; Few (2 - 10 %), Manganiferous, Fine (0 - 2 mm), Nodules; , Calcareous, , , , Gypseous, , ; Field pH 8.5 (Raupach, 0.1); Common, very fine (0-1mm) roots; Gradual, Wavy change to -
A13	0.22 - 0.52 m	Dark greyish brown (2.5Y4/3-Moist); ; Medium heavy clay; Strong grade of structure, 10-20 mm, Subangular blocky; Moderate grade of structure, 5-10 mm, Subangular blocky; Smooth-ped fabric; Dry; Very strong consistence; 2-10%, fine gravelly, 2-6mm, subrounded, dispersed, Quartzite, coarse fragments; Few (2 - 10 %), Manganiferous, Fine (0 - 2 mm), Nodules; Few (2 - 10 %), Calcareous, Fine (0 - 2 mm), Soft segregations; , Gypseous, , ; Field pH 9 (Raupach, 0.4); Few, very fine (0-1mm) roots; Clear, Wavy change to -
B21	0.52 - 0.82 m	Olive brown (2.5Y4/4-Moist); ; Medium heavy clay; Moderate grade of structure, 10-20 mm, Subangular blocky; Moderate grade of structure, 5-10 mm, Subangular blocky; Smooth-ped fabric; Dry; Strong consistence; Common cutans, 10-50% of ped faces or walls coated, distinct; Few (2 - 10 %), Manganiferous, Fine (0 - 2 mm), Nodules; Common (10 - 20 %), Calcareous, Fine (0 - 2 mm), Soft segregations; , Gypseous, , ; Field pH 8.5 (Raupach, 0.7); Diffuse, Wavy change to -
B22	0.82 - 1.14 m	Dark yellowish brown (10YR4/4-Moist); ; Medium heavy clay; Moderate grade of structure, 10-20 mm, Subangular blocky; Smooth-ped fabric; Moderately moist; Very firm consistence; Common cutans, 10-50% of ped faces or walls coated, distinct; Few (2 - 10 %), Manganiferous, Fine (0 - 2 mm), Nodules; Few (2 - 10 %), Calcareous, Fine (0 - 2 mm), Soft segregations; , Gypseous, , ; Field pH 8.5 (Raupach, 1); Diffuse, Wavy change to -

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B22	1.14 - 1.44 m	Dark yellowish brown (10YR4/4-Moist); ; Medium heavy clay; Moderate grade of structure, 2-5 mm, Subangular blocky; Smooth-ped fabric; Moderately moist; Very firm consistence; Few cutans, <10% of ped faces or walls coated, distinct; Few (2 - 10 %), Manganiferous, Fine (0 - 2 mm), Nodules; Few (2 - 10 %), Calcareous, Fine (0 - 2 mm), Soft segregations; , Gypseous, , ; Field pH 8.5 (Raupach, 1.3); Diffuse, Wavy change to -
B23	1.44 - 1.84 m	Dark yellowish brown (10YR4/5-Moist); ; Medium heavy clay; Moderate grade of structure, 2-5 mm, Subangular blocky; Smooth-ped fabric; Moderately moist; Strong consistence; Few cutans, <10% of ped faces or walls coated, distinct; Few (2 - 10 %), Manganiferous, Fine (0 - 2 mm), Nodules; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Soft segregations; , Gypseous, , ; Field pH 8.5 (Raupach, 1.6); Wavy change to -

Morphological Notes

Observation Notes

DLR1056; TUNNELL EROSION COMMON;SURFACE WEAKLY SELF MULCHING - SAMPLED

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations		Na	Exchangeable Acidity	CEC	ECEC	ESP
m		dS/m	Ca	Mg	K	Cmol (+)/kg			%
0 - 0.02	7.79A	0.05A	26B	5.7	0.78	0.27	21.7I		1.24
			15.2J	5.5	0.33	0.08			0.37
0.02 - 0.22	8.7A	0.07A	7.26J	2.75	0.29	0.03	12.2I		0.25
0.22 - 0.52	9.12A	0.13A	23B	8.4	0.35	1.9			
0.52 - 0.82	8.71A	0.51A	11.5J	7.99	0.03	1.73	20.3D		8.52
							26.8I		6.46
0.82 - 1.14	8.68A	0.61A							
1.14 - 1.44	8.51A	0.65A							
1.44 - 1.84	8.39A	0.69A	7.95J	9.06	0.1	2.45	25.8I		9.50

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle GV	Size CS	Analysis FS	Silt	Clay
m	%	%	mg/kg	%	%	%	Mg/m3			%		
0 - 0.02	0.2A	1.1B		0.03A	0.07A	0.256A		12A	32	15	40	
0.02 - 0.22	1A	0.6B						10A	23	18	50	
0.22 - 0.52												
0.52 - 0.82	0.6A	0.4B						9A	23	18	51	
0.82 - 1.14												
1.14 - 1.44												
1.44 - 1.84								8A	21	17	54	

Depth	COLE	Gravimetric/Volumetric Water Contents						K sat	K unsat
m		Sat.	0.05 Bar	0.1 Bar	0.5 Bar	1 Bar	5 Bar	15 Bar	
			g/g - m3/m3						

0 - 0.02
 0.02 - 0.22
 0.22 - 0.52
 0.52 - 0.82
 0.82 - 1.14
 1.14 - 1.44
 1.44 - 1.84

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Laboratory Analyses Completed for this profile

10A1	Total sulfur - X-ray fluorescence
10B	Extractable sulfur(mg/kg) - Phosphate extractable sulfur
12A1_CU	DTPA - extractable copper, zinc, manganese and iron
12A1_FE	DTPA - extractable copper, zinc, manganese and iron
12A1_MN	DTPA - extractable copper, zinc, manganese and iron
12A1_ZN	DTPA - extractable copper, zinc, manganese and iron
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
15D2_CEC	CEC - 1M ammonium acetate at pH 7.0, pretreatment for soluble salts; automatic extractor
15F1_CA	Exchangeable bases by 0.01M silver-thiourea (AgTU)+, no pretreatment for soluble salts
15F1_K	Exchangeable bases by 0.01m (AgTU)+, no pretreatment for soluble salts
15F1_MG	Exchangeable bases by 0.01m (AgTU)+, no pretreatment for soluble salts
15F1_NA	Exchangeable bases by 0.01m (AgTU)+, no pretreatment for soluble salts
15F3	CEC by 0.01M silver-thiourea (AgTU)+
15N1	Exchangeable sodium percentage (ESP)
17A1	Total potassium - X-ray fluorescence
19A1	Carbonates - rapid titration
3A1	EC of 1:5 soil/water extract
4A1	pH of 1:5 soil/water suspension
5A1	Chloride - 1:5 soil/water extract, potentiometric titration
6B2	Total organic carbon - high frequency induction furnace, volumetric
7A2	Total nitrogen - semimicro Kjeldahl , automated colour
9A1	Total phosphorus - X-ray fluorescence
P10_CF_C	Clay (%) - Coventry and Fett pipette method
P10_CF_CS	Coarse sand (%) - Coventry and Fett pipette method
P10_CF_FS	Fine sand (%) - Coventry and Fett pipette method
P10_CF_Z	Silt (%) - Coventry and Fett pipette method