## **EAR** East Avenue Range Land System

Area:	169.0 km <sup>2</sup>							
Landscape:	Dune range of low rises with swampy flats between the Kennion and Lucindale ranges, with some salinity in the northern end.							
Annual rainfall:	610 – 710 mm average							
Geology:	Calcreted calcarenite of the Pleistocene Bridgewater Formation on ridges, with Pleistocene lagoonal deposits of the Padthaway Formation on flats.							
Main soils:	<ul> <li>H3 (22%) Bleached siliceous sand (sandy Bleached Tenosol)</li> <li>B7 (20%) Shallow sand over clay on calcrete (sandy Petrocalcic Sodosol-Chromosol)</li> <li>I1 (16%) Highly leached sand (Aeric Podosol)</li> <li>B6 (12%) Shallow loam over red-brown clay on calcrete (Petrocalcic Red Chromosol-Kandosol)</li> </ul>							
Minor soils:	<ul> <li>RR (8%) Bare calcrete</li> <li>G3 (7%) Thick sand over clay (sandy Brown-Red Chromosol-Sodosol)</li> <li>B3 (6%) Shallow sandy loam on calcrete (Petrocalcic Red Tenosol-Kandosol-Rudosol)</li> </ul>							
Summary:	The deep sands have water repellence, excessive drainage and low fertility limitations, whereas the shallow soils over calcrete are limited in their productivity by low moisture storage and restricted available rooting depth.							

## Soil Landscape Unit summary: East Avenue Range (EAR)

SLU	% of area	Component	Main soils	Prop#	Notes
MAB	0.4	Rise	B3RR	D	Gently undulating calcreted former beach ridges with stony, very shallow red and brown loam, occasionally over red clay, on calcrete. >50% bare calcrete. Main soils: <u>Shallow sandy loam</u> <u>on calcrete</u> - <b>B3</b> and <u>Rock or exposed calcrete</u> - <b>RR</b> .
MEB	1.6	Stony rise Dune	B3 11H3	V L	Gently undulating stony rises with shallow sandy loam, occasionally on red clay, on calcreted calcarenite. 10-20% dunes with water repellent, mostly bleached, acid, siliceous sand. Main soils: <b>Rises:</b> <u>Shallow sandy loam on calcrete</u> - <b>B3</b> . <b>Dunes:</b> <u>Highly leached sand - <b>I1</b>. <u>Bleached siliceous sand - <b>H3</b></u>.</u>
MFB	0.5	Low rise	B6B3 B9	D	Low rises with shallow loam or sand, mostly over red clay, but often on dark yellow-grey clay in swales, on calcrete. 10-30% of rise areas have shallow calcareous loam on calcrete or bare rock. Main soils: <u>Shallow sandy loam over red-brown clay on calcrete</u> - <b>B6</b> , <u>Shallow sandy loam on calcrete</u> - <b>B3</b> and <u>Shallow clay</u> <u>loam over brown or dark clay on calcrete</u> - <b>B9</b> .
MGE	0.7	Depression	B7B5	D	Depression with shallow sandy loam over poorly structured brown clay on calcrete; or shallow dark clay loam over dark clay on calcrete. 10-30% bare calcrete. Main soils: <u>Sand over friable brown clay on calcrete</u> - <b>B7</b> and





	1.1	Dune	H3	Г	<u>Shallow dark clay loam on limestone</u> - <b>B5</b> .
	Ī	<u>01</u>		E	MHB Gently sloping calcarenite ridges with deep bleached
MHC 37		Stony	<b>B</b> 3RR	E	siliceous sands on dunes, often over brown sandy clay. Co-
MHC 37		range			dominant are shallow stony rises with shallow siliceous sand on
u I	7.3	Dune	H3I1B7	D	calcrete or bare rock, occasionally sandy loam on red clay on
		range			calcrete.
	0.2	Hill/Rise	B3I1B8	D	MHC Undulating slopes on calcarenite range as for MHB but
MHQ 2	2.0	Dune	H3I1B7	D	with 10-30% of rise areas have rock outcrop or shallow sand on
	ļ	range			calcrete or deep siliceous sand.
		Swale	G3B7 B8	Μ	<ul> <li>MHD Rolling hills and rises with shallow, often bleached, sand over calcrete and deep, water repellent, bleached sands; 10-30% shallow sandy loam over red clay on calcrete.</li> <li>MHQ Undulating rises and low hills as for MHC; &lt;10% swales with deep sand over brown clay, often poorly structured; or shallow bleached sand on calcrete.</li> </ul>
					Main soils: Dunes: Bleached siliceous sand - H3. Stony ranges: Shallow sandy loam on calcrete - B3 and Rock or exposed calcrete - RR. Dune ranges: Bleached siliceous sand - H3, Highly leached sand - I1 and Sand over friable brown clay on calcrete - B7. Swales: Thick sand over clay - G3, Sand over friable brown clay on calcrete - B7 and Shallow sand on calcrete - B8.
					Hills and rises: <u>Shallow sandy loam on calcrete</u> - <b>B3</b> , <u>Highly</u> <u>leached sand</u> - <b>11</b> and <u>Shallow sand on calcrete</u> - <b>B8</b> .
MNC 8	3.7	Dune range	H3B6	D	MNC Undulating low hills and rises with deep, bleached, water repellent, acid sand and shallow sandy loam over red clay on
MND 1	1.0	Dune range	B3RR H3	D	calcreted calcarenite; 10-30% shallow sand or bare calcrete. <b>MND</b> Rolling hills and rises with mixed shallow sand on calcreted calcarenite, bare calcrete and deep, water repellent, bleached, acid, siliceous sand; 10-30% sandy loam over red clay on calcrete.
					Main soils: Low, undulating dune ranges: <u>Bleached siliceous sand</u> - H3 and <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6. Rolling hills and rises: <u>Shallow sandy loam on calcrete</u> - B3, <u>Rock</u> <u>or exposed calcrete</u> – RR and <u>Bleached siliceous sand</u> - H3.
MRA 1	1.2	Plain	B6B7 G3	D	MRA Plains with shallow sand over red clay, or poorly structured brown clay in low parts, on calcrete; or deep sand over brown
MRB 7	7.9	Undulating	B6B7	D	clay; 10-30% deep siliceous sandy rises.
		plain	G3		<ul> <li>MRB Gently undulating plains, soils as for MRA.</li> <li>Main soils: <u>Shallow sandy loam over red-brown clay on calcrete</u></li> <li>- B6, <u>Sand over friable brown clay on calcrete</u> - B7 and <u>Thick</u> sand over clay - G3.</li> </ul>
MWO 1	1.2	Undulating plain	G3B7	D	MWO Very gently undulating plains with deep bleached sand over brown clay, often poorly structured, on calcrete. <10%
	F	Swampy swale	G3N3	М	swampy swales with wet sandy loam over poorly structured clay.
MWT 6	5.2	Undulating plain	G3B7	V	<b>MWT</b> Undulating plain with soils as for <b>MWO</b> .
		Swampy swale	G3N3	L	Main soils: <b>Undulating plains:</b> <u>Thick sand over clay</u> - <b>G3</b> and <u>Sand over</u> <u>friable brown clay on calcrete</u> - <b>B7</b> . <b>Swampy swales:</b> <u>Thick sand over clay</u> - <b>G3</b> , <u>Wet clay loam</u> - <b>N3</b> .
MYA O	D.7	Plain	B7B8 B3	D	MYA Plains with shallow sand over poorly structured brown clay on calcrete; or shallow sand, often bleached, on calcrete.
MYB 0	9.8	Undulating	B6B8 B3	D	<b>MYB</b> Gently undulating plains with shallow sandy loam over red clay on calcrete, and other soils as for <b>MYA</b> .
		plain	DO		





Swamp         M4A7         L         grading to calcareous grey clay on mark; 10-30% sand over brown clay.           MZ0         5.8         Plain         B6B7         D         Plains With select and Shallow sandy loam our calcrete - 87. Shallo sandy loam our calcrete - 83. Swamps: Deep hard gradational sondy loam - M4 and Calcareous clay loam on mark; 10-30% sandy loam our calcrete - 83.           MZ0         5.8         Plain         B6B7         D         Plains with shallow loam over red clay, or poorty structured brown clay, on calcrete. <10% swamps with wet dark clay over dark clay, on calcrete. <10% swamps with wet dark clay over dark clay, on calcrete.           MZ0         5.8         Plain         B7G3         D         Plains with shallow sand ver poorty structured brown clay or calcrete - 87.           NDA         0.2         Plain         B7G3         D         Plains with shallow sand ver poorty structured brown clay or calcrete - 87.           NIDA         0.2         Plain         B7G3         D         Plains with shallow sand ver poorty structured brown clay or calcrete - 87.           NIDA         0.4         Plain         G4         D         Plains with shallow sand ver poorty structured brown clay or calcrete - 87.           NVA         0.4         Plain         G4         D         Plains with shallow sand ver poorty structured brown clay or calcrete - 87.           NVA         0.4         Plain				D2	1	aver party structured dark brown alow or adjagradus alow lago
MZO         5.8         Plain         B687         D           MZO         5.8         Plain         B687         D         Plains: Sand over finibile brown clay on calcrete - 87. Shallo sand on calcrete - 86 and Shallow sandy loam on calcrete - 83. Swamp: Deep hard acadational sandy loam on calcrete - 87.           MZO         5.8         Plain         B687         D         Plains with shallow sandy loam on calcrete - 87.           MZO         5.8         Plain         B687         D         Plains with shallow sandy loam over red clay, or pooly structured brown clay, on calcrete.         40% swamps with wet dark clay over dark clay, mostly on calcrete.           MDA         0.2         Plain         B7G3         D         Plains with shallow sand over pooly structured brown clay on calcrete - 87.           NNA         0.2         Plain         B7G3         D         Plains with shallow sand over pooly structured brown clay. Calcrete: or deep sand over pooly structured brown clay. Main solis: Sand over clay - 63.           NvA         0.4         Plain         G4         D         Plains with this sand or calcreter repellent - 87. Main solis: Sand over clay 63.           NvA         0.4         Plain         G4         D         Plain with this sand or calcreter clay 63.           NvA         0.4         Plain         D         OFB high dunes with deep, water repellent cid, bleached clay.			Su como re	B3		over poorly structured dark brown clay or calcareous clay loam
Main soils:         Provins: Sand avert finible brown clay on calcrete - 87. Shallow sandy loam over test-brown. on calcrete - 88. Shallow sandy loam over test-brown. on calcrete - 88. Shallow sandy loam on calcrete - 83. Swamps: Deep hard gradual load is and on calcrete - 88. Shallow sandy loam over calcrete - 83. Swamps: Deep hard gradual load is and on calcrete - 80. Shallow sandy loam over test clay, or poolty structured brown clay. on calcrete - 105. Swamps with well dark clay over dark clay, on calcrete - 105. Swamps: Well clay load on ver red-brown clay on calcrete - 105. Swamps: Well clay load over finable brown clay. on calcrete - 87. Swamps: Well clay load over brown clay. On calcrete - 87. Swamps: Well clay load over brown clay. On calcrete - 87. Swamps: Well clay load over brown clay. On calcrete - 87. Swamps: Well clay load over brown clay. On calcrete - 87. Swamps: Well clay load over brown clay. On calcrete - 87. Swamps: Well clay load over brown clay. On calcrete - 87. Swamps: Well clay load over brown clay. On calcrete - 87. Swamps: Well clay load over brown clay. On calcrete - 87. Swamps: Well clay load over brown clay. On calcrete - 87. Swamps: Well clay load over brown clay. On calcrete - 87. Swamps: Well clay load over brown clay. On calcrete - 87. Swamps: Well clay load over brown clay. On calcrete - 87. Swamps: Well clay load over brown clay. On calcrete - 87. Swamps: Well clay load over brown clay. On calcrete - 87. Swamps: Well clay load over brown clay. On calcrete - 87. Swamps: Well clay load over brown clay. On calcrete - 87. Swamps: Well clay load over brown clay. On calcrete - 87. Swamps: Well clay load over brown clay. On calcrete - 87. Swamps: Well clay load over brown clay. Swamp - 100: Swales with shale over solad. Clay load over brown clay. Swamp - 100: Swales with shale over clay 63. Swale - 100: Swales with shale over clay 63. Swale - 100: Swale -			swamp	M4A/	L	
MZO         5.8         Plain         B687         D         Plains "Enclosed stands" sands via on calcrete - \$7. Shallow sands via sands via on on calcrete - \$8. Shallow sands via on on calcrete - \$8. Swamps: Deep hard aradational sands loam • M4 and Calcretous clay loam on mart - A7.           MZO         5.8         Plain         B687         D         Plains with shallow sands via on calcrete - \$13. Swamps: Deep hard aradational sands loam • M4 and Calcretous clay loam on mart - A7.           MZO         5.8         Plain         B687         D         Plains with shallow sands via on calcrete - \$105 swamps with uset dark clay over dark clay, on calcrete - \$105 swamps with wet dark clay over dark clay, on calcrete - \$105 swamps with via clay on calcrete and Sand over faithe brown clay on calcrete - \$17.           NDA         0.2         Plain         87G3         D         Plains with shallow sand via one or clay on calcrete - \$17. Swamps: Wet clay loam - Nt motis solis: Sand over thown clay on calcrete - \$17.           NDA         0.2         Plain         87G3         D         Plains with shallow sand over poorty structured brown clay on calcrete: or deep sand over brown clay on calcrete - \$17.           NMA         0.4         Plain         B7G3         D         Swamps: Wet clay loam - Nt motin solis: Sand over clay - G3 and Wet clay loam - Nt moderately soline wet solis. 10-30% moderately well drained deep siliceous sand, via sont song via come neory poorty structured brown range         B7           NvA         0.4         Plain						prown clay.
MZO         5.8         Plain         B687         D         Plains "Enclosed stands" sands via on calcrete - \$7. Shallow sands via sands via on on calcrete - \$8. Shallow sands via on on calcrete - \$8. Swamps: Deep hard aradational sands loam • M4 and Calcretous clay loam on mart - A7.           MZO         5.8         Plain         B687         D         Plains with shallow sands via on calcrete - \$13. Swamps: Deep hard aradational sands loam • M4 and Calcretous clay loam on mart - A7.           MZO         5.8         Plain         B687         D         Plains with shallow sands via on calcrete - \$105 swamps with uset dark clay over dark clay, on calcrete - \$105 swamps with wet dark clay over dark clay, on calcrete - \$105 swamps with via clay on calcrete and Sand over faithe brown clay on calcrete - \$17.           NDA         0.2         Plain         87G3         D         Plains with shallow sand via one or clay on calcrete - \$17. Swamps: Wet clay loam - Nt motis solis: Sand over thown clay on calcrete - \$17.           NDA         0.2         Plain         87G3         D         Plains with shallow sand over poorty structured brown clay on calcrete: or deep sand over brown clay on calcrete - \$17.           NMA         0.4         Plain         B7G3         D         Swamps: Wet clay loam - Nt motin solis: Sand over clay - G3 and Wet clay loam - Nt moderately soline wet solis. 10-30% moderately well drained deep siliceous sand, via sont song via come neory poorty structured brown range         B7           NvA         0.4         Plain						
MZO         5.8         Plain         B687         D         Plains         Stallows sandy loarn over red-brown on or calcrete - 83           MZO         5.8         Plain         B687         D         Plains with shallow loarn over red clay, or poorly structured brown clay, on calcrete, -10% swamps with wet dark clay over dark clay, mostly on calcrete.           MZO         5.8         Plain         B687         D         Plains with shallow loarn over red-lorown clay, on calcrete.           MZO         5.8         Plain         B7G3         D         Plains with shallow loarn over red-brown clay on calcrete - 817.           NDA         0.2         Plain         B7G3         D         Plains with shallow sand over poorly structured brown clay on calcrete - 87 on Thick sand over clay 63.           Nsj         0.8         Swale         G3N3         D         Swales with deep sand over brown clay on calcrete - 87 on Thick sand over clay - 63.           NvA         0.4         Plain         G4         D         Plains with shallow sand vec mod over brown clay - 64.           NvA         0.4         Plain         G4         D         Plains with shallow sand vec relay - 63.           NvA         0.4         Plain         G4         D         Plains with shallow sand vec relay - 63.           NvA         0.4         Plain         <						
MZO         5.8         Plain         B6BZ         D         Plains with shallow loam over red clay, or poorly structured brown clay, on calcrete - 80.           MZO         5.8         Plain         B6BZ         D         Plains with shallow loam over red clay, or poorly structured brown clay, on calcrete - 80.           MZO         5.8         Plain         N3         M         brown clay, on calcrete - 81.           Swamp         N3         M         brown clay, on calcrete - 81.         Swamps with clay on calcrete - 81.           NDA         0.2         Plain         B7G3         D         Plains with shallow sand ver poorly structured brown clay, or calcrete - 87.           Swamp         N3         D         Plains with shallow sand ver poorly structured brown clay, Main soils: Sand over brown clay, on calcrete - 87.           NDA         0.2         Plain         B7G3         D         Swame with deep sand over brown clay, offen wet; 10-30% moderately well drained deep siliceous sand, with clay or caffee rock at depth.           Nsj         0.8         Swale         G3N3         D         Swale with deep, water repellent acid, bleached siliceous sand, vith clay or caffee rock at depth.           NvA         0.4         Plain         G4         D         Plains with thin sand or sandy loam over repellent acid, bleached siliceous sand, vith deep, water repellent acid, bleached siliceous sand, vith soalis sand						
MZO         5.8         Plain         B467         D         Plains with shallow loam on md - A7.           MZO         5.8         Plain         B467         D         Plains with shallow loam over red clay, or poorly structured brown clay, on calcrete.            MZO         5.8         Plain         B467         D         Plains with shallow loam over red-brown clay, on calcrete.           Main soils:         Plains: Shallow sandy loam over red-brown clay on calcrete - and Sand over fidable brown clay. on calcrete - and Sand over fidable brown clay.         No.4         0.2           NDA         0.2         Plain         B7G3         D         Plains with shallow sand over poorly structured brown clay. on calcrete - and Sand over fidable brown clay. On calcrete - B7 on Thick sand over clay.         Main soils: Sand over fidable brown clay. Or contente - 10.30% moderately well drained deep siliceous sand, with clay or coffee rock at depth.           NvA         0.4         Plain         G4         D         Plains with thins and or sandy loam over poorly structured b clay.           NvA         0.4         Plain         G4         D         Plains with the sand over clayG3 and Wet clay loam - N3.           NvA         0.4         Plain         D         OFE High dunes with deep, water repellent acid, bleached clay clay loam.           NvA         0.4         Plain         D         OFE High dunes with deep, v						sand on calcrete - <b>B8</b> , Shallow sandy loam over red-brown clay
MZ0         5.8         Plain         B687         D Plains with shallow loam over red clay, or poorly structured brown clay, on calcrete.         A7.           MZ0         5.8         Plain         N3         M         brown clay, on calcrete.         A7.           MZ0         5.8         Plains with shallow loam over red-brown clay, on calcrete.         A7.         A7.           M20         5.8         Plain         N3         M         brown clay, on calcrete.         A7.           M20         2.2         Plain         B7G3         D         Plains with shallow sond over poorly structured brown clay. Main soils: Sand over frable brown clay.         Main soils: Sand over frable brown clay. Main soils: Sand over clay - G3.           Nsj         0.8         Swale         G3N3         D         Swales with deep sond over brown clay. Main soils: Sand over clay - G3.         Moin soils: Sand over clay - G3.           NvA         0.4         Plain         G4         D         Plains with thin sand or sandy loam over poorly structured brown clay.         Main soils: Sand over clay - G3 and Wet clay loam - N3.           NvA         0.4         Plain         G4         D         Plains with thin sand or sandy loam over poorly structured brown clay.         Main soils: Sand over clay - G3 and Wet clay loam - N3.           OFB         0.2         Dune         11						
MZO       5.8       Plain       6687       D       Plains with shallow loam over red clay, or poorly structured brown clay, on calcrete.         NDA       0.2       Plain       N3       M       Main soils:       Plains: Shallow sandy loam over red-brown clay on calcrete and Sand aver fliable brown clay. on calcrete - 87.         NDA       0.2       Plain       B7G3       D       Plains with shallow sand over poorly structured brown clay. Calcrete : or deep sand over brown clay. Main soils: Sand over fliable brown clay. Calcrete - 87 on Thick sand over clay - G3.         Nsj       0.8       Swale       G3N3       D       Swales with deep sand over brown clay. offen wet: 10-30% moderately sailiceous sand, with clay or coffee rock at deph.         NvA       0.4       Plain       G4       D       Plains with thin sand or sandy loam over poorly structured b clay.         Min soils: Thick sand over clay G3 and Wet clay loam - Ni.       Main soils: Sand over relay G3 and Wet clay loam - Ni.         NvA       0.4       Plain       G4       D       Plains with thin sand or sandy loam over poorly structured b clay.         OFB       0.2       Dune       11H3       D       OFF Unes with deep, water repellent acid, bleached sand.         OFG       0.2       Low dune       11       D <td< td=""><td></td><td></td><td></td><td></td><td></td><td>Swamps: Deep hard gradational sandy loam - M4 and</td></td<>						Swamps: Deep hard gradational sandy loam - M4 and
Swamp         N3         M         brown clay, on calcrete, <10% swamps with wet dark clay over dark clay, mostly on calcrete.           Mini soils:         Plains: Shallow sandy loam over red-brown clay on calcrete and Sand over friable brown clay on calcrete - 87.           NDA         0.2         Plain         B7G3         D         Plains with shallow sand over poorly structured brown clay on calcrete - 87.           NMA         0.2         Plain         B7G3         D         Plains with shallow sand over poorly structured brown clay on calcrete - 87.           Nsj         0.8         Swale         G3N3         D         Swales with deep sand over brown clay, often wet; 10-30% moderately saline wet sails, 10-30% moderately well drained deep siliceous sand, with clay or coffee cock at depth.           NvA         0.4         Plain         G4         D         Plains with deep, water repellent acid, bleached siliceous sand, with clay or coffee cock at depth.           NvA         0.4         Plain         G4         D         OFB High dunes with deep, water repellent acid, bleached siliceous sand.         10% stony ranges with shallow sandy loam, order acidy, load, water repellent acid, bleached siliceous sand.           OFB         0.2         Low dune         11         D         OFE High dunes as above; 10-20% swales with bleached sar over brown sandy clay on calcreted calcarenite; 10-30% on p structured clay, on calcreted calcarenite; 10-30% on p structured clay, on calcreted calcarenite; 10-30						<u>Calcareous clay loam on marl</u> - <b>A7</b> .
NDA     0.2     Plain     B7G3     D     Plains 'ihailaw sand ver red-brown clay on calcrete - B7.       NDA     0.2     Plain     B7G3     D     Plains with shallow sand ver poorty structured brown clay on calcrete - B7.       NNA     0.2     Plain     B7G3     D     Plains with shallow sand ver poorty structured brown clay on calcrete - B7.       NNA     0.2     Plain     B7G3     D     Plains with shallow sand ver poorty structured brown clay on calcrete - B7.       NNa     0.8     Swale     G3N3     D     Swales with deep sand over brown clay on calcrete - B7.       NNA     0.4     Plain     G4     D     Swales with deep sand over brown clay on calcrete - B7.       NVA     0.4     Plain     G4     D     Plains with shallow sandy loam over poorty structured by clay on calcrete - G4.       OFB     0.2     Dune     1113     D     OFB High dunes with deep, water repellent acid, bleached clay clay on poty structured by clay.       OFC     0.1     Dune     11     D     OFC Dunes with deep, bleached, acid, water repellent, sliceous sand.       OFG     0.2     Low dune     11     D     OFC Dunes with deep, bleached, acid, water repellent, sliceous sand.       OFG     0.2     Low dune     11     D     OFC Dunes with deep, bleached, acid, water repellent, sliceous sand.       O	MZO	5.8	Plain	B6B7	D	Plains with shallow loam over red clay, or poorly structured
NDA     0.2     Plain     B7G3     D     Plains : Shallow sand ver red-brown clay on calcrete and Sand over friable brown clay on calcrete - B7.       NDA     0.2     Plain     B7G3     D     Plains with shallow sand over poorty structured brown clay on calcrete: or deep sand over brown clay. On calcrete - B7 on Thicks sand over clay - G3.       Nsj     0.8     Swale     G3N3     D     Swales with deep sand over brown clay. On calcrete - B7 on Thicks and over clay - G3.       Nsj     0.8     Swale     G3N3     D     Swales with deep sand over brown clay. on calcrete - B7 on Thicks and over clay - G3.       NvA     0.4     Plain     G4     D     Plains with shallow sandy loarn over poorty structured be clay. Coloretely well drained deep siliceous sand, with clay or coffee rock at depth.       NvA     0.4     Plain     G4     D       OFB     0.2     Dune     1113     D     OFB High dunes with deep, water repellent acid, bleached clay. on calcreted calcrenite; 10-30% on pragmes with shallow sandy loarn, or calcreted clay. on calcreted clay.       OFC     0.1     Dune     11     D       OFC     0.2     Low dune     11     D       OFG     0.4     Low dune     11     D       OFG     0.4     Low dune     11     D       OFG     0.4			Swamp	N3	М	brown clay, on calcrete. <10% swamps with wet dark clay loam
Main soils:     Plains: Shallow sandy loam over red-brown clay on calcrete and Sand over fridble brown clay on calcrete     • B7.       NDA     0.2     Plain     B7G3     D     Plains with shallow sand over poorty structured brown clay calcrete; or deep sand over fridble brown clay on calcrete - B7.       Nyi     0.8     Swale     G3N3     D     Swales with deep sand over brown clay on calcrete - B7 on Thick sand over clay - C3.       Nvi     0.4     Plain     G4     D     Plains with shallow sand over brown clay on calcrete - B7 on Thick sand over clay - C3.       NvA     0.4     Plain     G4     D     Plains with shallow and over clay - C3 and Wet clay loam - Ni moderately saline wet soils, 10-30% moderately well drained deep siliceous sand, with clay or coffee rock at depth.       NvA     0.4     Plain     G4     D     Plains with shallow sandy loam over poorty structured b clay.       OFB     0.2     Dune     11H3     D     OFF High dunes with deep, water repellent acid, bleached siliceous sand.     OFC Dunes with shallow sandy loam, offen over red clay, on calcreted calcrenite; 10-30% on p structured clay in swales and lower slopes.       OFD     0.2     Low dune     11     D       OFQ     0.4     Low dune     11     D       OFQ     0.4     Low dune     11     D       OFQ     0.4     Low dune     10     Sinclower sady clay no calcreted calcr				-		
Plains:         Shallow sand vloam over red-brown clay on calcrete and sand over friable brown clay on calcrete = B7.           NDA         0.2         Plain         B7G3         D         Plains with shallow sand over poory clay. Calcrete: or deep sand over brown clay on calcrete - B7 an Thick sand over clay - G3.           Nsj         0.8         Swale         G3N3         D         Swales with deep sand over brown clay. offen wet: 10-30% moderately saline wet soils. 10-30% moderately well drained deep siliceous sand, with clay or coffer cock at clap ham.           NvA         0.4         Plain         G4         D         Plains with thin sand or sandy loam over poorly structured by moderately saline wet soils. 10-30% moderately well drained deep siliceous sand, with clay or coffer cock at clap ham.           NvA         0.4         Plain         G4         D         Plains with thin sand or sandy loam over poorly structured by moderately saline wet soils. 10-30% moderately and hom.           OFB         0.2         Dune         111 D         OFB High dunes with deep, water repellent acid, bleached siliceous sand.         OFD Load uner stopps.           OFC         0.1         Dune         11         D         OFE Low dunes as above.         OFE Low dunes as above. <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
Plains:       Shallow sand yloam over red-brown clay on calcrete and sand over friable brown clay. The sand over clay - G3.         Nsj       0.8       Swale       G3N3       D       Plains with shallow sand over brown clay. offen wet: 10-30% moderately saline wet soils. 10-30% moderately well drained deep siliceous sand, with clay or coffer cock at clap harms with this sand or sandy loam over poorly structured both and sand sand sand over read-brown clay - G4.         NVA       0.4       Plain       G4       D       Plains with this and or sandy loam over poorly structured body. Main soils: Sand over read-load on clay - G4.         OFB       0.2       Dune       111 D       D       OFB High dunes with deep, water repellent acid, bleached siliceous sand. 210% stony ranges with shallow sandy loam, range or throw sandy clay load non calcrete and sandy bar solad over stown sandy clay load non calcrete and sandy bar solad.         OFC       0.1       Dune       11       D       OFB Low dunes as above: 10-20% swales with bleached sand over stown clay on calcrete and sand bar sond y load on calcrete and sand and solad sand y load on calcrete and sand sand y load on calcrete and sand and sand y load on calcrete and sand and sand and y load on calcrete and sand and and sand and y load and calcreda siliceous sand and and sand and y load on calcrete						Main soils:
NDA       0.2       Plain       B7G3       D       Plains with shallow sand over poorly structured brown clay or calcrete - B7.         NDA       0.2       Plain       B7G3       D       Plains with shallow sand over poorly structured brown clay or calcrete; or deep sand over brown clay. Main solits: Sand over fride/be brown clay. Main solits: Sand over fride/be brown clay. Offen wet: 10-30%         Nsj       0.8       Swale       G3N3       D       Swales with deep sand over brown clay. offen wet: 10-30%         NvA       0.4       Plain       G4       D       Plains with shallow sand over clay - G3 and Wet clay loam - Ni.         NvA       0.4       Plain       G4       D       Plains with thin sand or sandy loam over poorly structured by range         OFB       0.2       Dune       111-3       D       OFC High dunes with deep, water repellent acid, bleached offer over a clay. on calcreted calcarenite; 10-30% on postructured clay. on calcreted calcarenite; 10-30% on postructured clay. on calcrete clay. and lower stopes.         OFC       0.1       Dune       11       D       OFC Unes with deep, bleached, acid, water repellent, sliceous sand.          OFG       0.4       Low dune       11       D       OFC Unes with deep, bleached, acid, water repellent, sliceous sand.          OFG       0.4       Low dune       11       D       OFC Unes with deep, water repellent acid, bleached						
NDA         0.2         Plain         B7G3         D         Plains with shallow sand over poorly structured brown clay of calcrete; or deep sand over brown clay. Main soils: Sand over fridble brown clay on calcrete; - B7 on Thicks and over clay - G3.           Nsj         0.8         Swale         G3N3         D         Swales with deep sand over brown clay, often wet; 10-30% moderately well draineed deep sliceous sand, with clay or coffee rock at depth.           NvA         0.4         Plain         G4         D         Plains with thin sand or sandy loam over poorly structured brown clay - G3 and Wet clay loam - Ni.           NvA         0.4         Plain         G4         D         Plains with thin sand or sandy loam over poorly structured brown clay - G4.           OFB         0.2         Dune         11H3         D         OFE High dunes with deep, water repellent acid, blacched siliceous sand, -10% stony ranges with shallow sandy loam, range           OFC         0.1         Dune         11         D         OFE Clay in swales and lower slopes.           OFG         0.2         Low dune         11         D         OFF Low dunes as above; 10-20% swales with bleached sard over brown clay on calcrete - 83.           OFG         0.2         Low dune         11         D         OFF Low dunes as above; 10-20% swales with bleached sard over brown sandy loam on calcrete - 84.           Swale         G2N3 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td></t<>						
NDA         0.2         Plain         B7G3         D         Plains with shallow sand over poorly structured brown clay. Main soils: Sand over fideble brown clay. on calcrete - B7 on Thick sand over clay - G3.           Nsj         0.8         Swale         G3N3         D         Swales with deep sand over brown clay. on calcrete - B7 on Thick sand over clay - G3.           Nvi         0.4         Plain         G4         D         Swales with deep sand over brown clay. offen wet; 10-30% moderately saline wet soils, 10-30% moderately well drained deep siliceous sand, with clay or coffee rock at depth.           NvA         0.4         Plain         G4         D         Plains with thin sand or sandy loam over poorly structured b clay.           OFB         0.2         Dune         11H3         D         OFB High dunes with deep, water repellent acid, bleached clay is wales and lower slopes.         OFC           OFC         0.1         Dune         11         D         OFE Ourse with deep, bleached, acid, water repellent, sliceous sand.         Sliceous sand.         OFE Ourse with deep, bleached, acid, water repellent, sliceous sand.           OFQ         0.4         Low dune         11         D         OFE Ourse with deep, water repellent acid, bleached sand over brown sandy clay is and sadowe.         OFE Ourse with deep, water repellent acid, water repellent, sliceous sand.         Sliceous sand.         OFE Ourse with deep, water repellent acid, bleached slial over re						
Nsj       0.8       Swale       G3N3       D       Swales with deep sand over brown clay. Main soils: Sand over frable brown clay on calcrete - B7 an Thick sand over clay - G3.         Nsj       0.8       Swale       G3N3       D       Swales with deep sand over brown clay. offen wet; 10-30% moderately well drained deep siliceous sand, with clay or caffee rock at depth.         NvA       0.4       Plain       G4       D       Plains with thins sand or sandy loam over poorly structured b clay.         OFB       0.2       Dune       11H3       D       OFB High dunes with deep, water repellent acid, bleached siliceous sand, <10% stony range with shallow sandy loam, range		0.0	Dlain	D700		
Main soils: Sand over friable brown clay on calcrete - 67 an Thick sand over for construction over brown clay. offen wet; 10-30% moderately saline wet soils, 10-30% moderately well drained deep siliceous sand, with clay or colfee rock at depth.         NvA       0.4       Plain       G4       D       Plains with thin sand or sandy loam over poorly structured b clay.         NVA       0.4       Plain       G4       D       Plains with thin sand or sandy loam over poorly structured b clay.         OFB       0.2       Dune       11H3       D       OFE High dunes with deep, water repellent acid, bleached structured clay, on calcreted calcarenite; 10-30% on p structured clay, on calcreted calcarenite; 10-30% on p structured clay in swales and lower slopes.         OFF       0.2       Low dune       11       V         OFF       0.4       Low dune       10       OFF       0FC Dunes with deep, bleached, acid, water repellent, siliceous sand. <10% shallow sandy loam - G2 and Wei loam - N3.         OHC       2.2       Dune       1	NDA	0.2	Plain	B/G3	U	
Nsj         0.8         Swale         G3N3         D         Swales with deep sand over bols, 10-30% moderately well drained deep siliceous sand, with clay or coffee rock at depth.           NvA         0.4         Plain         G4         D         Plains with thin sand or sandy loam over poorty structured be clay.           NvA         0.4         Plain         G4         D         Plains with thin sand or sandy loam over poorty structured be clay.           OFB         0.2         Dune         11H3         D         OFE High dunes with deep, water repellent acid, bleached siliceous sand. <10% stony ranges with shallow sandy loam, often over red clay, on calcreted calcarenite; 10-30% on p structured clay in swales and lower slopes.						
Nsj       0.8       Swale       G3N3       D       Swales with deep sand over brown clay, often wet; 10-30% moderately well drained deep siliceous sand, with clay or coffee rock at depth.         NvA       0.4       Plain       G4       D       Plains with thin sand or sandy loam over poorty structured b clay.         OFB       0.2       Dune       11H3       D       OFB thin soils: Sand over yellow and brown clay - G4.         OFC       0.1       Dune       11       D       OFC Units with the deep, water repellent acid, bleached siliceous sand. <10% stony ranges with shallow sandy loam, often over red clay, on calcreted calcarenite; 10-30% on p structured clay in swales and lower slopes.						
NvA       0.4       Plain       G4       D       Plains with this sand over clay - G3 and Wet clay loam - Ni         NvA       0.4       Plain       G4       D       Plains with this sand or sandy loam over poorly structured be clay.         OFB       0.2       Dune       11H3       D       OFB High dunes with deep, water repellent acid, bleached siliceous sand. <10% stony ranges with shallow sandy loam, often over red clay, on calcreted calcarenite; 10-30% on p structured clay in swales and lower slopes.		_			-	
NvA       0.4       Plain       G4       D       Plains with thin sand or sandy loam over poorly structured by clay.         NvA       0.4       Plain       G4       D       Plains with thin sand or sandy loam over poorly structured by clay.         OFB       0.2       Dune       11H3       D       OFB High dunes with deep, water repellent acid, bleached clay.         OFC       0.1       Dune       11       D       OFC bits sand over red clay. on calcreted calcarenite; 10-30% on protein swales and lower slopes.         OFD       0.2       Low dune       11       D       Structured clay in swales and lower slopes.         OFD       0.2       Low dune       11       D       OFC Dunes with deep, bleached, acid, water repellent, siliceous sand.         OFQ       0.4       Low dune       11       V       OFC Dunes with deep, bleached, acid, water repellent, siliceous sand.         OFQ       0.4       Low dune       11       V       OFC Dunes with deep, bleached, acid, water repellent, siliceous sand.         OFQ       0.4       Low dune       11       V       OFC Dunes with deep, bleached, acid, acid, water repellent, siliceous sand, clay to more sandy clay to m or clay; often wet.         Swale       G2N3       L       OFG Low dunes as above; 10-20% swales with bleached sand over brown sandy clay to m orealarete - 86. <td>Nsj</td> <td>0.8</td> <td>Swale</td> <td>G3N3</td> <td>D</td> <td></td>	Nsj	0.8	Swale	G3N3	D	
NvA       0.4       Plain       G4       D       Main soils: Thick sand over clay - G3 and Wet clay loam - N: clay.         NvA       0.4       Plain       G4       D       Plains with thin sand or sandy loam over poorly structured b clay.         OFB       0.2       Dune       11H3       D       OFB High dunes with deep, water repellent acid, bleached siliceous sand. <10% stony range						
NvA       0.4       Plain       G4       D       Plains with thin sand or sandy loam over poorly structured by clay.         OFB       0.2       Dune       11H3       D       OFB High dunes with deep, water repellent acid, bleached siliceous sand. <10% stony ranges with shallow sandy loam, often over red clay, on calcreted calcarenite; 10-30% on prostructured clay in swales and lower stopes.						deep siliceous sand, with clay or coffee rock at depth.
NvA       0.4       Plain       G4       D       Plains with thin sand or sandy loam over poorly structured be clay. Main soils: Sand over yellow and brown clay - G4.         OFB       0.2       Dune       11H3       D       OFB High dunes with deep, water repellent acid, bleached siliceous sand. <10% stony ranges with shallow sandy loam, often over red clay, on calcreted calcarenite; 10-30% on prostructured clay in swales and lower stopes.						
OFB     0.2     Dune     11H3     D       OFB     Grave     Main soils: Sand over yellow and brown clay - G4.       OFB     Stony     B3B6     M       Site     Stony     B3B6     M       OFC     0.1     Dune     II       OFD     0.2     Low dune     II       OFQ     0.4     Low dune     II       OFQ     0.4     Low dune     II       V     Swale     G2N3     L       OFG     Grave     Swale     G2N3       V     Swale     G2N3     L       OFG     Dune     III     V       Swale     G2N3     L     OFG Low dunes as above:       OFG Low dunes as above:     III.     Dense with deep, bleached, acid, water repellent, siliceous sand.       OHC     2.2     Dune     III.       V     Swale     G2N3     L       OHC     2.2     Dune     III.       V     Stony rise:     Shallow sandy loam on calcrete - B3.       OHC     2.2     Dune     III.       OHC     2.2     Dune     III.       OHC     Stony rise     B3     M       OHD     1.6     Dune     II						Main soils: Thick sand over clay - G3 and Wet clay loam - N3.
OFB       0.2       Dune       I1H3       D       OFB High dunes with deep, water repellent acid, bleached, siliceous sand. <10% stony ranges with shallow sandy loam, offen over red clay, on calcreted calcarenite; 10-30% on postructured clay in swales and lower slopes.	NvA	0.4	Plain	G4	D	Plains with thin sand or sandy loam over poorly structured brown
OFB       0.2       Dune       I1H3       D       OFB High dunes with deep, water repellent acid, bleached, siliceous sand. <10% stony ranges with shallow sandy loam, offen over red clay, on calcreted calcarenite; 10-30% on postructured clay in swales and lower slopes.						clay.
OFB       0.2       Dune       11H3       D       OFB High dunes with deep, water repellent acid, bleached siliceous sand, <10% stony ranges with shallow sandy loam, often over red clay, on calcreted calcarenite; 10-30% on positive tructured clay in swales and lower slopes.         OFD       0.2       Low dune       11       D       Structured clay in swales and lower slopes.         OFD       0.2       Low dune       11       D       OFC Dunes with deep, bleached, acid, water repellent, siliceous sand.         OFq       0.4       Low dune       11       V       OFD Low dunes as above.         Swale       G2N3       L       OFD Low dunes as above; 10-20% swales with bleached sar over brown sandy clay loam to clay; often wet.         Main soils:       Dunes: Highly leached sand - 11, Bleached siliceous sand - 1       Stony rises: Shallow sandy loam on calcrete - 83.         OHC       2.2       Dune       11H3       D       OHC Dunes with deep, water repellent acid, bleached siliceous sand - 1         Stony rise       B3       M       over red clay, on calcreted calcarenite, which outcrops occasionall as and, <10% stony rises, soils as for OHC.						
Stony range         B386         M         siliceous sand. <10% stony ranges with shallow sandy loam, often over red clay, on calcreted calcarenite; 10-30% on po- structured clay in swales and lower slopes.           OFD         0.2         Low dune         I1         D         OFC Dunes with deep, bleached, acid, water repellent, sliceous sand.           OFQ         0.4         Low dune         I1         V         Sliceous sand.           OFQ         0.4         Low dune         I1         V         Sliceous sand.           OFQ         0.4         Low dune         G2N3         L         OFC bunes with deep, bleached, acid, water repellent, sliceous sand.           Swale         G2N3         L         OFQ Low dunes as above; 10-20% swales with bleached sard over brown sandy clay loam to clay; often wet.           Main soils:         Dunes; Highly leached sand - I1, Bleached sliceous sand - I Stony rise; Shallow sandy loam on calcrete - B3.           OHC         2.2         Dune         I1H3         D           OHC         1.6         Dune         I1H3         D           OHC         1.6         Dune         I1H3         D           OHD         1.6         Stony rise         B3         M           OHD         1.6         Dune         I1H3         D           OHC	OFB	0.2	Dune	11H3	D	
OFC       0.1       Dune       11       D         OFD       0.2       Low dune       11       D       Structured clay in swales and lower slopes.         OFQ       0.4       Low dune       11       D       OFC Dunes with deep, bleached, acid, water repellent, siliceous sand.         OFq       0.4       Low dune       11       V       OFC Dunes with deep, bleached, acid, water repellent, siliceous sand.         OFQ       0.4       Low dune       11       V       OFC Dunes with deep, bleached, acid, water repellent, siliceous sand.         OFQ       0.4       Low dune       11       V       OFQ Low dunes as above.         OFQ Low dunes as above.       OFQ Low dunes as above; 10-20% swales with bleached sand over brown sandy clay loam to clay; often wet.         Main soils:       Dunes: Highly leached sand - 11, Bleached siliceous sand - H         Stony rise       B3       M         OHC       2.2       Dune       11H3       D         OHD       1.6       Dune       11H3       D         OHD       0.		0.2			-	
OFC       0.1       Dune       11       D         OFD       0.2       Low dune       11       D         OFq       0.4       Low dune       11       V         Swale       G2N3       L       OFQ Low dunes as above.       OFQ Low dunes as above.         OFq Low dunes as above;       0FQ Low dunes as above;       10-20% swales with bleached sar over brown sandy clay loam to clay; offen wet.         Main soils:       Dunes: Highly leached sand - 11, Bleached siliceous sand - 1         OHC       2.2       Dune       11H3         OHD       1.6       Stony rise       B3         Main soils:       Dunes: Highly leached sand - 11, Bleached siliceous sand - 1         OHD       1.6       Dune       11H3         D       Stony rise       B3       M         OHD       1.6       Dune       11H3         D				0000	1 * 1	
OFD         0.2         Low dune         I1         D           OFq         0.4         Low dune         I1         V         siliceous sand.         OFQ Low dunes as above; 10-20% swales with bleached sar over brown sandy clay loam to clay; often wet.           Swale         G2N3         L         OFQ Low dunes as above; 10-20% swales with bleached sar over brown sandy clay loam to clay; often wet.           Main soils:         Dunes: Highly leached sand - 11, Bleached siliceous sand - 1         Stony rise: B3 and Shallo sandy loam on calcrete - B3 and Shallo sandy loam over red-brown clay on calcrete - B4.           OHC         2.2         Dune         11H3         D           OHC         1.6         Dune         11H3         D           OHD         1.6         Dune         11H3         D           OHD         1.6         Stony rise         B3         M           OHD         1.6         Dune         11H3         D           OHD         Stony rise         B3         M           OHD         1.6         Dune         11H3         D           Stony rise         B3         M         OHC Dunes with deep, water repellent acid, bleached silice ous sand - I           OHD         1.6         Dune         I1H3         D         OHC Dunes with deep, wa	OFC	01		11		
OFq       0.4       Low dune       11       V       siliceous sand.         Swale       G2N3       L       OFq Low dunes as above; 10-20% swales with bleached sar over brown sandy clay loam to clay; often wet.         Main soils:       Dunes: Highly leached sand - 11, Bleached siliceous sand - 1         OHC       2.2       Dune       11H3       D         OHD       1.6       Stony rise       B3       M         OHD       1.6       Dune       I1H3       D       Stony rises, soils as for OHC.         Main soils:       Dunes: Highly leached sand - 11, Bleached siliceous sand - 1       Stony						
OFQ       OFD Low dunes as above.         Swale       G2N3       L         OFq Low dunes as above:       10-20% swales with bleached sar over brown sandy clay loam to clay; often wet.         Main soils:       Dunes: Highly leached sand - 11, Bleached siliceous sand - I Stony rises: Shallow sandy loam on calcrete - B3 and Shallo sandy loam over red-brown clay on calcrete - B6.         OHC       2.2       Dune       11H3       D         OHD       1.6       Dune       11H3       D         OHD       1.6       Dune       11H3       D         OHD       1.6       Stony rise       B3       M         OHD       1.6       Stony rise       B3       M         OHD       1.6       Stony rise       B3       M         OHD       1.6       Dune       11H3       D         OHD       1.6       Stony rise       B3       M         OHD       1.6       Stony rise       B3       M         OHD       1.6       Dune       11H3       D         OHD       1.6       Stony rise       B3       M         OHD Low dunes, <10% stony rises, soils as for OHC.						
Swale       G2N3       L       OFq Low dunes as above; 10-20% swales with bleached sar over brown sandy clay loam to clay; often wet.         Main soils:       Dunes: Highly leached sand - I1, Bleached siliceous sand - I         OHC       2.2       Dune       I1H3       D         OHC       1.6       Dune       I1H3       D         OHD       1.6       Dune       I1H3       D         OHD       1.6       Stony rise       B3       M         OHD       1.6       Stony rise       B3       M         OHD       1.6       Stony rise       B3       M         OHD       1.6       Dune       I1H3       D         OHD       1.6       Stony rise       B3       M         OHD       1.6       Dune       I1H3       D         OHD       1.6       Stony rise       B3       M         OHD       1.6       Dune       I1H3       D         OHD       1.6       Dune       I1H3       D         OHD       Stony rise       B3       M       OHC class stony rises, soils as for OHC.         Main soils:       Dunes: Highly leached sand - I1, Bleached siliceous sand - I       Stony rises: Shallow sandy loam on calcrete - B3. <td>OFq</td> <td>0.4</td> <td>LOW DUNE</td> <td></td> <td>v</td> <td></td>	OFq	0.4	LOW DUNE		v	
OHC       2.2       Dune       11H3       D       Story rises: Shallow sandy loam on calcrete - B3 and Shallo sandy loam over red-brown clay on calcrete - B4.         OHC       2.2       Dune       11H3       D       OHC Dunes with deep, water repellent acid, bleached silice ous sand year - N3.         OHD       1.6       Dune       11H3       D       OHC Dunes with deep, water repellent acid, bleached silice ous sand year - N3.         OHD       1.6       Dune       11H3       D       OHC Dunes with deep, water repellent acid, bleached silice ous sand year - N3.         OHD       1.6       Dune       11H3       D       over red clay, on calcreted calcarenite, which outcrops occasionally also.         OHD       1.6       Stony rise       B3       M       occasionally also.         OHD       1.6       Stony rise       B3       M       occasionally also.         PEE       0.8       Swale       12       D       Sand plains and swales with deep, poorty drained, acid, bleached, siliceous sand over coffee rock or clay.         PEE       0.8       Swale       12       D       Sand plains and swales with deep, poorty drained, acid, bleached, siliceous sand over coffee rock or clay.         Wain soils:       Low dunes: Wet highly leached sand - 12.       D			Swale	G2N3	L	
Main soils:       Dunes: Highly leached sand - 11, Bleached siliceous sand - H         Stony rises:       Shallow sandy loam on calcrete - B3 and Shallo         Sandy loam over red-brown clay on calcrete - B4.       Swales:         Swales:       Bleached sand over sandy clay loam - G2 and Wet         OHC       2.2       Dune         Stony rise       B3         OHD       1.6       Dune         OHD       1.6         Dune       11H3         D       OHC Dunes with deep, water repellent acid, bleached silic         over red clay, on calcreted calcarenite, which outcrops         occasionally also.         OHD       1.6         Dune       11H3         D       OHC Dunes with deep, water repellent acid, bleached silic         over red clay, on calcreted calcarenite, which outcrops         occasionally also.       OHD Low dunes, <10% stony rises, soils as for OHC.						-
Dunes: Highly leached sand - 11, Bleached siliceous sand - H         Stony rises: Shallow sandy loam on calcrete - B3 and Shallo         Sandy loam over red-brown clay on calcrete - B6.         Swales: Bleached sand over sandy clay loam - G2 and Wet         Image: Bit in the second state in						over brown sandy clay loam to clay; often wet.
Dunes: Highly leached sand - 11, Bleached siliceous sand - H         Stony rises: Shallow sandy loam on calcrete - B3 and Shallo         Sandy loam over red-brown clay on calcrete - B6.         Swales: Bleached sand over sandy clay loam - G2 and Wet         Image: Bit in the second state in						
OHC       2.2       Dune       11H3       D       OHC Dunes with deep, water repellent acid, bleached silico acasionall over red clay, on calcrete clay, on calcrete clay, on calcrete clay, on calcrete, which outcrops occasionally also.         OHD       1.6       Dune       11H3       D       OHC Dunes with deep, water repellent acid, bleached silico sand, <10% stony rises with shallow sandy loam, occasionall over red clay, on calcreted calcarenite, which outcrops occasionally also.						
OHC       2.2       Dune       11H3       D       OHC Dunes with deep, water repellent acid, bleached silic         OHD       1.6       Dune       11H3       D       OHC Dunes with deep, water repellent acid, bleached silic         OHD       1.6       Dune       11H3       D       over red clay, on calcreted calcarenite, which outcrops occasionally also.         OHD       1.6       Dune       11H3       D       over red clay, on calcreted calcarenite, which outcrops occasionally also.         OHD       1.6       Stony rise       B3       M       over red clay, on calcreted sand - 11, Bleached siliceous sand - 1         OHD       1.6       Stony rise       B3       M       over red clay, on calcreted calcarenite, which outcrops occasionally also.         OHD Low dunes, <10% stony rises, soils as for OHC.						
OHC       2.2       Dune       I1H3       D         OHC       2.2       Dune       I1H3       D         OHD       1.6       Dune       I1H3       D         OHD       1.6       Dune       I1H3       D         OHD       1.6       Stony rise       B3       M         Stony rise       B3       M       over red clay, on calcreted calcarenite, which outcrops occasionally also.         OHD       Stony rise       B3       M       occasionally also.         OHD       N       D       Dune       N         Stony rise       B3       M       occasionally also.         OHD       Stony rise       B3       M         OHD       Dunes:       Highly leached sand - I1, Bleached siliceous sand - I         PEE       0.8       Swale       I2       D         Sand plains and swales with deep, poorly drained, acid, bleached, siliceous sand over coffee rock or clay. Main soils:         Low dunes: <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td></td<>						
OHC       2.2       Dune       11H3       D       OHC Dunes with deep, water repellent acid, bleached silice sand. <10% stony rises with shallow sandy loam, occasionall over red clay, on calcreted calcarenite, which outcrops occasionally also.         OHD       1.6       Dune       11H3       D       over red clay, on calcreted calcarenite, which outcrops occasionally also.         OHD       1.6       Dune       B3       M       occasionally also.         OHD       1.6       B3       M       occasionally also.         OHD       Stony rise       B3       M       occasionally also.         OHD       N       Stony rise       B3       M         PEE       0.8       Swale       I2       D       Sand plains and swales with deep, poorly drained, acid, bleached, siliceous sand over coffee rock or clay.         PEE       0.8       Swale       I2       D       Sand plains and swales with deep, poorly drained, acid, bleached, siliceous sand over coffee rock or clay.         Main soils:       Low dunes:       Wet highly leached sand - 12.       12						
OHC       2.2       Dune       11H3       D       OHC Dunes with deep, water repellent acid, bleached silic sand. <10% stony rises with shallow sandy loam, occasionall over red clay, on calcreted calcarenite, which outcrops occasionally also.         OHD       1.6       Dune       11H3       D       over red clay, on calcreted calcarenite, which outcrops occasionally also.         OHD       1.6       Dune       B3       M       over red clay, on calcreted calcarenite, which outcrops occasionally also.         OHD       Stony rise       B3       M       over red clay, on calcreted calcarenite, which outcrops occasionally also.         OHD       N       Stony rise       B3       M         OHD       N       D       OHD       OHD         PEE       0.8       Swale       I2       D         PEE       0.8       Swale       I2       D       Sand plains and swales with deep, poorly drained, acid, bleached, siliceous sand over coffee rock or clay. Main soils: Low dunes: Wet highly leached sand - I2.						Swales: <u>Bleached sand over sandy clay loam</u> - G2 and <u>Wet clay</u>
Stony rise       B3       M       sand. <10% stony rises with shallow sandy loam, occasionall over red clay, on calcreted calcarenite, which outcrops occasionally also.         OHD       1.6       Dune       11H3       D       over red clay, on calcreted calcarenite, which outcrops occasionally also.         Stony rise       B3       M       OHD Low dunes, <10% stony rises, soils as for OHC.						
Stony rise       B3       M       sand. <10% stony rises with shallow sandy loam, occasionall over red clay, on calcreted calcarenite, which outcrops occasionally also.         OHD       1.6       Dune       11H3       D       over red clay, on calcreted calcarenite, which outcrops occasionally also.         Stony rise       B3       M       OHD Low dunes, <10% stony rises, soils as for OHC.	OHC	2.2	Dune	I1H3	D	OHC Dunes with deep, water repellent acid, bleached siliceous
OHD       1.6       Dune       11H3       D       over red clay, on calcreted calcarenite, which outcrops occasionally also.         Stony rise       B3       M       OHD Low dunes, <10% stony rises, soils as for OHC.			Stony rise	B3	М	sand. <10% stony rises with shallow sandy loam, occasionally
Stony rise       B3       M       occasionally also.         OHD Low dunes, <10% stony rises, soils as for OHC.	OHD	1.6				
PEE       0.8       Swale       12       D       Sand plains and swales with deep, poorly drained, acid, bleached, siliceous sand over coffee rock or clay. Main soils:         Level       0.8       Swale       12       D       Sand plains and swales with deep, poorly drained, acid, bleached, siliceous sand over coffee rock or clay. Main soils:         Low dunes:       Wet highly leached sand - 12.					-	
PEE       0.8       Swale       12       D       Sand plains and swales with deep, poorly drained, acid, bleached, siliceous sand over coffee rock or clay. Main soils:         Low dunes:       Wet highly leached sand - 12.			,	-		
PEE       0.8       Swale       12       D       Sand plains and swales with deep, poorly drained, acid, bleached, siliceous sand over coffee rock or clay. Main soils:         Low dunes:       Wet highly leached sand - 12.						
PEE       0.8       Swale       12       D       Sand plains and swales with deep, poorly drained, acid, bleached, siliceous sand over coffee rock or clay. Main soils:         Low dunes:       Wet highly leached sand - 12.						Main soils:
Stony rises:       Shallow sandy loam on calcrete - B3.         PEE       0.8       Swale       I2       D       Sand plains and swales with deep, poorly drained, acid, bleached, siliceous sand over coffee rock or clay. Main soils:         Low dunes:       Wet highly leached sand - I2.						
PEE       0.8       Swale       12       D       Sand plains and swales with deep, poorly drained, acid, bleached, siliceous sand over coffee rock or clay. Main soils:         Low dunes:       Wet highly leached sand - 12.						
bleached, siliceous sand over coffee rock or clay. Main soils: Low dunes: <u>Wet highly leached sand</u> - 12.	PFF	ΛR	Swale	12	D	
Main soils: Low dunes: <u>Wet highly leached sand</u> - 12.	TEE	0.0	SWUIC	IZ		
Low dunes: <u>Wet highly leached sand</u> - 12.						
$\  \mathbf{X}qm \  \cup \mathbf{y} \ $ Swamp $\  N3 2 \  V \  \mathbf{X}qm$ Swamps with deep, mostly wet, poorly drained bleach	v	~ ~		NICIC		
	Xqm	0.9			V	
						siliceous sand over coffee rock or clay; 10-30% water filled. 10-
XqS         0.7         Swamp         N3I2         D         20% sandy rises with well to moderately drained deep blead	XqS	0.7	Swamp	N3I2	D	20% sandy rises with well to moderately drained deep bleached





					sand. Occasional stony rise.
					<b>XqS</b> Drainage depression with soils as for <b>Xqm</b> .
					Main soils:
					Swamps: Wet clay loam - N3 and Wet highly leached sand - 12.
					Sandy rises: Highly leached sand - 11 and Wet highly leached
					<u>sand</u> - <b>12</b> .
XRC	0.1	Swamp	N3	D	Swamps with wet dark, cracking clay soils with minor peats.
					Main soils: <u>Wet clay loam</u> - <b>N3</b> .
XtC	0.1	Swamp	N1	D	Peat swamps.
					Main soils: <u>Peaty soil</u> – <b>N1</b> .
XuC	0.7	Swamp	N3	D	XuC Swamps with mostly non-peaty, wet sandy soils. 10-30%
Xud	0.2	Swamp	N3	V	peat.
		Sandy rise	G3I2	L	Xud Non-peaty dark clay loamy swamps with 20-30% sandy rises
Xuf	1.0	Swamp	N3	V	with deep sand over brown clay, or deep sand on coffee rock.
		Stony rise	B2B3	С	Xuf Swamps as for Xud above, with stony rises and/or very
			B5		shallow over calcrete.
Xul	0.1	Swamp	N3	V	<b>Xul</b> Swamps as for <b>Xud</b> ; 10-30% water filled. 20-30% stony rises
		Stony rise	B2B3	С	with often calcareous, thin, dark, clay loam on calcrete.
			B5		<b>XuV</b> Drainage depressions with soils as for <b>Xud</b> ; 10-30% water filled or with saline wet soils.
XuV	0.1	Drainage	N3	D	
		depression			Main soils:
					Swamps: Peaty soil – N1 and Wet clay loam - N3.
					Sandy rises: Thick sand over clay - G3 and Wet highly leached
					sand - 12.
					Stony rises: Shallow calcareous loam on calcrete - B2, Shallow
					sandy loam on calcrete - B3 and Shallow dark clay loam on
					limestone - B5.
XwC	0.9	Swamp	N3N2	D	Swamps with wet non-saline and moderately saline sandy loam
					over dark clay; 10-30% water filled or with bleached sand over
					brown clay.
					Main soils: <u>Peaty soil</u> – <b>N1</b> and <u>Wet saline clay loam</u> - <b>N2c</b> .
ZR-	0.1	Lagoonal	N2A7	D	Saline lagoonal depression with often wet, calcareous dark clay
		depression			loam grading to clay, on marl; occasionally on calcrete.
					Main soils: Wet saline clay loam - N2c and Calcareous clay
					<u>loam on marl</u> - <b>A7</b> .

# PROPORTION codes assigned to Soil Landscape Unit (SLU) components:

- D Dominant in extent (>90% of SLU)
- V Very extensive in extent (60–90% of SLU)
- E Extensive in extent (30–60% of SLU)

- C Common in extent (20–30% of SLU)
- L Limited in extent (10–20% of SLU)
- M Minor in extent (<10% of SLU)

## Detailed soil profile descriptions:

- A7 <u>Calcareous clay loam on marl (Marly Calcarosol)</u> Dark calcareous clay with a marly subsoil (often saline in Upper SE). Often with shells and a peaty surface.
- **B2** <u>Shallow calcareous sandy loam on calcrete (Petrocalcic Calcarosol)</u> Up to 40 cm calcareous loamy sand to sandy loam with variable calcrete rubble overlying calcreted calcarenite - rises.
- **B3** <u>Shallow sandy loam on calcrete (Petrocalcic Rudosol)</u> Medium thickness non calcareous sandy loam, often having a slight clay increase with depth, over calcreted calcarenite shallower than 50 cm - rises.





- **B5** <u>Shallow dark clay loam on limestone (Petrocalcic, Black Dermosol)</u> Black clay loam to light clay over calcreted limestone at shallow depth, grading to highly calcareous clay - flats.
- **B6** <u>Shallow sandy loam over red-brown clay on calcrete (Petrocalcic, Red Kandosol)</u> Medium thickness sandy loam with slight ironstone gravel overlying a weakly structured reddish brown sandy clay on calcarenite within 50 cm - rises.
- B7 <u>Shallow sand over sandy clay on calcrete (Petrocalcic, Brown Chromosol)</u> Medium thickness sand overlying brown friable sandy clay to clay on limestone or calcreted sandy clay within 50 cm - flats.
- **B8** <u>Shallow sand on calcrete (Petrocalcic, Bleached-Leptic Tenosol)</u> Thick bleached sand over calcreted calcarenite within 50 cm - rises.
- **B9** <u>Shallow clay loam over brown or dark clay on calcrete (Clay loamy Petrocalcic Sodosol)</u> Poorly structured, often coarse prismatic, clay loam grading to brown or dark clay on calcrete.
- G2 <u>Bleached sand over sandy clay loam (sandy Brown-Red Chromosol)</u> Sandy texture contrast soil with a bleached A2 and a friable brown-red sandy clay loam to sandy loam subsoil.
- **G3** <u>Thick sand over clay (Hypercalcic, Brown Sodosol/ Chromosol)</u> Thick bleached sand with an organically darkened surface abruptly overlying a massive to coarsely structured brown to reddish yellow sandy clay to clay, calcareous with depth - rises.
- **G4** <u>Sand over poorly structured clay (Sandy Brown-Red Sodosol-Chromosol)</u> Topsoil <30 cm over a poorly structured subsoil. Thin sandy texture contrast soil with a sodic /dispersive /poorly structured brown or red clayey subsoil. Can have some ironstone.
- H3 <u>Deep bleached sand (Basic, Arenic, Bleached-Orthic Tenosol)</u> Grey sand over a very thick bleached sand grading to yellow sand continuing below 100 cm.
- Highly leached sand (Fragic, Pipey, Aeric Podosol) Grey sand with a very thick bleached A2 layer, over dark brown and yellow massive soft to semihard clayey sand (coffee rock), grading to softer yellow and brown sand to sandy clay loam from about 80 cm.
- 12 <u>Wet highly leached sand (Fragic, Humic, Aquic Podosol)</u> Grey sand with a thick bleached A2 horizon, overlying a thin to thick layer of coffee rock, grading to pale brown sand sharply overlying a grey, brown and yellow mottled sandy clay loam to light clay.
- M4 <u>Deep hard gradational sandy loam (Hard Brown-Dark Kandosol- Dermosol)</u> Deep dark brown loamy to clay loamy soil grading to clay at depth. Hardsetting surface often with prismatic structures in the subsoil.
- N1 <u>Peat (Organosol)</u> Peaty soil.

EAR

- N2c <u>Wet saline clay loam (Dermosolic, Salic Hydrosol)</u> Medium thickness dark grey to black clay loam to clay grading to well-structured dark grey clay with minor carbonates and a water table within 100 cm.
- N3 <u>Seasonally waterlogged, non to marginally saline equivalents of soils listed above</u>, viz.:
   N3c Wet G3
   N3d Wet B5
   N3e Wet B7
- **RR** Bare rock

Further information: DEWNR Soil and Land Program

