

KLN Kalangadoo Land System

Area:	357.9 km ²
Landscape:	Gently undulating plain with low rises. Small swamps are common. Occasional higher dunes and calcreted rises also occur. Elevation is 60 m above sea level on the western edge rising to 70 m in the east. Relief is only a few metres.
Annual rainfall:	615 – 740 mm average
Geology:	Pleistocene Padthaway Formation lacustrine clay and muds, overlain with Pleistocene-Holocene Molineaux Sand quartz sands.
Main soils:	G3 (34%) Thick sand over clay (sandy Brown-Red Chromosol-Sodosol) G5 (10%) Sand over acidic clay (sandy Brown Kurosol)
Minor soils:	N3 (8%) Wet soil (non to moderately saline) (Sodosolic-Calcarosolic-Dermosolic Hydrosol) F2 (8%) Loam over poorly structured brown or dark clay (Brown-Dark Sodosol-Chromosol) I2 (7%) Wet highly leached sand (Aquic or Semi-Aquic Podosol) B7 (6%) Shallow sand over poorly structured brown clay on calcrete (sandy Petrocalcic Sodosol-Chromosol)
Summary:	Nearly half of the soils in this land system are acidic sands over poorly structured brown or grey clays, which are frequently strongly acidic also. These soils have production problems if pHs fall too low. Partial remediation can be achieved by application of lime. The strongly acid subsoils are difficult to treat and so represent a significant limitation. Waterlogging and wetness are commonly occurring constraints for many units in the land system. The soils are mostly deep. This land system occupies much of what is colloquially referred to as “red gum country”.

Soil Landscape Unit summary: Kalangadoo Land System (KLN)

SLU	% of area	Component	Main soils	Prop#	Notes
M-B	0.1	Rise	B4	D	Gently undulating low calcreted former beach ridge rise with stony, very shallow red-brown clay loam over red clay soils. >50% bare calcrete. Main soils: <u>Shallow red loam on limestone</u> - B4 .
MCB	0.9	Undulating plain	G3C3	D	Gently undulating plain: loam over poorly structured brown clay and deep gradational loam over brown clay. Shallow rises with 10-30% loam over poorly structured brown clay; loam over well structured red clay; or loam; all over calcreted calcarenite. Main soils: <u>Thick sand over clay</u> - G3 and <u>Friable gradational clay loam</u> - C3 .
MDAA	0.1	Rise	B4M2 F1	D	MDAA Gently undulating plains with shallow well structured clay loam on red clay over calcrete; deep brown clay loam grading to brown clay; or deep clay loam over dark brown poorly
		Outcrop	B4B2	M	



MDB	0.2	Rise	B4B6	D	structured clay. <10% rock outcrop/very shallow loams. MDB Gently undulating rises with medium shallow, well structured clay loam on red clay over calcrete. Main soils: Rises: <u>Shallow red loam on limestone</u> - B4 , <u>Deep friable gradational clay loam</u> - M2 , <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6 and <u>Loam over brown or dark clay</u> - F1 . Outcrops: <u>Shallow red loam on limestone</u> - B4 and <u>Shallow calcareous loam on calcrete</u> - B2 .
MEB	0.5	Rise	B7I1 H3	D	Gently sloping rise with shallow sandy loam over poorly structured brown clay on calcrete; deep well drained acid sands and 10-30% shallow sandy loam on red clay or directly on calcrete. <10% flats with shallow clay loam on red, or poorly structured brown, clay. Main soils: Rises: <u>Sand over friable brown clay on calcrete</u> - B7 , <u>Highly leached sand</u> - I1 and <u>Bleached siliceous sand</u> - H3 . Flats: <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6 and <u>Sand over friable brown clay on calcrete</u> - B7 .
		Flat	B6B7	M	
MHB	0.1	Rise	B3B6	V	Gently sloping calcarenite ridge with shallow sandy loam, often over red clay over calcrete; 10-30% of subsoils are poorly structured brown clay. 10-20% deep bleached siliceous sands on dunes. Main soils: Rises: <u>Shallow sandy loam on calcrete</u> - B3 and <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6 . Dunes: <u>Highly leached sand</u> - I1 , <u>Wet highly leached sand</u> - I2 and <u>Bleached siliceous sand</u> - H3 .
		Dune	I2H3	L	
MRA	0.5	Plain	B6G3	D	MRA Plain with shallow sandy loam over mostly red clay, but with 10-30% poorly structured brown clay, on calcreted calcarenite; co-dominant with deep sand on poorly structured brown clay on low sandy rises. MRB Gently sloping rises with acid sands over strongly acid brown clay and shallower sandy loam over red clay on calcreted calcarenite. MRG As for MRA with 10% non-swampy swales. Main soils: Plains and swales: <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6 and <u>Thick sand over clay</u> - G3 . Rises: <u>Sand over acidic clay</u> - G5 and <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6 .
MRB	0.1	Rise	G5B6	D	
MRG	0.2	Plain/rise	G3B6	D	
		Swale	B6G3	M	
MWA	0.1	Plain	B3B7	D	Plains with shallow sandy loam over calcrete or over poorly structured brown clay on calcrete. 10-30% deep sand on low rises or sandy loam over red clay. Main soils: <u>Shallow sandy loam on calcrete</u> - B3 and <u>Sand over friable brown clay on calcrete</u> - B7 .
MYA	0.6	Plain	B4B5	D	Plains with shallow clay loam over red clay; or dark clay on calcarenite. 10-30% deep, dark clay soils with abundant soft carbonate in subsoils. Main soils: <u>Shallow red loam on limestone</u> - B4 and <u>Shallow dark clay loam on limestone</u> - B5 .



NCA	1.4	Plain	G3	D	Plain with acid sand over poorly structured brown clay, often acid; and minor sandy loam over dark brown clay. <10% swamps with sandy clay loam over poorly structured dark brown clay or acid sand over acid brown clay. Main soils: Plains: <u>Thick sand over clay</u> - G3 . Swamps: <u>Sandy loam over poorly structured brown or dark clay</u> - F2 .
		Swamp	F2	M	
NJF	0.1	Swampy plain	C5N3	D	NJF Plains with deep dark clay loam grading to dark clay with soft carbonate at depth. 10-50% swamps with wet dark clay soil.
NJT	2.4	Swampy plain	B5C5	V	NJT As above, co-dominant with shallower dark clay soils over calcrete. 20-30% rises with deep sand over poorly structured brown clay or coffee rock. Main soils: Swampy plains: <u>Gradational dark clay loam</u> – C5 , <u>Shallow dark clay loam on limestone</u> - B5 and <u>Wet clay loam</u> - N3 . Sandy rises: <u>Thick sand over clay</u> - G3 and <u>Wet highly leached sand</u> - I2 .
		Sandy rise	G3I2	C	
NKE	0.7	Plain	C5B5 F2	V	Plains with deep dark clay loam over dark clay; co-dominant with shallow dark clay on calcrete. 20-30% mixed rises with stony shallow loam over red clay on calcrete or sand over poorly structured brown clay. Main soils: Plains: <u>Gradational dark clay loam</u> – C5 , <u>Shallow dark clay loam on limestone</u> - B5 and <u>Sandy loam over poorly structured brown or dark clay</u> - F2 . Rises: <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6 .
		Rise	B6	C	
NMA	8.8	Plain	F2B7	D	NMA Plains with sandy loam over poorly structured brown clay often over calcrete; 10-30% ironstone gravelly sand over poorly structured brown clay. <10% sand over clay rises. <10% swamps with dark clay soils, often over calcrete.
		Sandy rise	G3	M	
		Swamp	M2B5	M	
NMF	4.4	Plain	F2B7	V	NMF As for NMA with 20-30% swamps
		Swamp	M2	C	
NMJ	1.5	Plain	G3F2	V	NMJ As for NMA with 10-20% swamps and 10% stony rises. Main soils: Plains: <u>Sandy loam over poorly structured brown or dark clay</u> - F2 , <u>Thick sand over clay</u> - G3 and <u>Sand over friable brown clay on calcrete</u> - B7 . Swamps: <u>Wet clay loam</u> - N3 , <u>Deep friable gradational clay loam</u> - M2 , <u>Deep hard gradational sandy loam</u> - M4 , <u>Sandy loam over poorly structured brown or dark clay</u> - F2 and <u>Shallow dark clay loam on limestone</u> - B5 . Sandy rises: <u>Thick sand over clay</u> - G3 . Stony rises: <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6 and <u>Shallow sandy loam on calcrete</u> - B3 .
		Swamp	N3F2 M4	L	
		Stony rise	B6B3	M	
NnA	0.6	Plain	C5B5	D	Plains with co-dominant deep dark clay loam to clay; or shallow over calcreted marl. 10-30% deep sand over brown clay on rises. <10% wet swamps, water filled or with dark clays or acid peat. Main soils: Plains: <u>Gradational dark clay loam</u> – C5 , <u>Shallow dark clay loam on limestone</u> - B5 . Swamps: <u>Wet clay loam</u> - N3 and <u>Peaty soil</u> – N1 .
		Swamp	N3N1 WW	M	



NRA	1.5	Plain	G3G5	V	NRA Plains with acid to strongly acid, deep sand over poorly structured acid yellow-brown clay; 10-20% low stony rises with shallow loam over red clay, or poorly structured brown clay on calcreted calcarenite. 10-30% of the stony rises have bare calccrete exposed or very shallow soils.
		Stony rise	B6B7	L	
		Swamp	N1N3 WW	M	
NRP	0.4	Plain	G3	V	NRP Plains as above, with sandy rises with deep acid sand over poorly structured brown clay. Main soils: Plains: <u>Thick sand over clay</u> - G3 and <u>Sand over acidic clay</u> - G5 . Stony rises: <u>Shallow sandy loam over red-brown clay on calccrete</u> - B6 and <u>Sand over friable brown clay on calccrete</u> - B7 . Swamps: <u>Wet clay loam</u> - N3 and <u>Peaty soil</u> - N1 . Sandy rises: <u>Thick sand over clay</u> - G3 , <u>Highly leached sand</u> - I1 .
		Sandy rise	G3I1	C	
NSA	2.7	Plain	G3G5	V	NSA Plains with deep acid sand over, often acid, clay; 10-30% deep dark clay loam over dark clay on non-swampy flats or depressions. 10-20% wet swamps, water filled or with dark clay or acid peat.
		Swamp	N3W WN1	L	
NSF	0.1	Plain	G3	V	NSF As above with 20-30% swamps with dark clayey soils. Main soils: Plains: <u>Thick sand over clay</u> - G3 and <u>Sand over acidic clay</u> - G5 . Swamps: <u>Wet clay loam</u> - N3 and <u>Peaty soil</u> - N1 .
		Swamp	N3	C	
NTA	6.6	Plain	G5G3	D	NTA Plains with mostly deep acid sands over acid yellow-brown clay. Deep sands on low rises. <10% swamps with sand over clay soils.
		Swamp	G4	M	
NTB	0.3	Rise	G5G3	D	NTB Gently undulating as above
NTF	0.6	Plain	G5G3	V	NTF Plains as above, with 10-50% swamps.
		Swamp	N3G3	C	
NTP	1.2	Plain	G3G4	V	NTP Plains as above, with <10% swamps and 10-30 sandy rises. Main soils: Plains: <u>Sand over acidic clay</u> - G5 and <u>Thick sand over clay</u> - G3 . Swamps: <u>Sand over yellow and brown clay</u> - G4 , <u>Wet clay loam</u> - N3 , <u>Brown or grey cracking clay</u> - E3 , <u>Thick sand over clay</u> - G3 . Rises: <u>Sand over acidic clay</u> - G5 , <u>Thick sand over clay</u> - G3 and <u>Wet highly leached sand</u> - I2 .
		Rise	G3I2	C	
		Swamp	G4N3 E3	M	
NUA	1.1	Plain	G3F1	V	NUA Plains with deep acid sand over brown clay and clay loam over dark brown clay. <10% swamps with sandy loam over dark clay or dark cracking clay soils. <10% sandy rises with deep acid sand over acid clay or deep sand soils.
		Swamp	N3G3	M	
		Sandy rise	G3	M	
NUD	0.4	Plain	G3	D	NUD Plains as above, no swamps but with 10% sandy rises.
		Sandy rise	G3I2	M	
NUX	1.7	Rise	G3	D	NUX Gently sloping pediments or slopes with deep sand over clay soils. 10-30% sandy rises. 10-30% shallow sandy loam over thin red clay on calcreted calcarenite. Main soils: Plains: <u>Thick sand over clay</u> - G3 and <u>Loam over brown or dark clay</u> - F1 . Swamps: <u>Wet clay loam</u> - N3 , and <u>Thick sand over clay</u> - G3 . Sandy rises: <u>Thick sand over clay</u> - G3 and <u>Wet highly leached sand</u> - I2 .
NvA	0.7	Plain	G5G3	D	NvA Plains with deep acid sand over mostly acid, clay. 10-30% shallow sandy loam over red clay on calcreted calcarenite. Occasional clayey swampy depression.
NvC	0.9	Plain	G5G3	V	
		Stony rise	B6B7	L	
		Swamp	N3M2 M4	M	NvC Plains as above, 10-20% stony rises with sandy loam over thin red clay on calcreted calcarenite. <10% swamps with dark



NvF	4.7	Plain	G3G5	V	cracking clay soils. NvF Plains as above with 20-30% swamps with dark cracking clay soils.
		Swamp	N3M2 M4	C	
NvO	1.9	Plain	F2	V	NvO Plains with 20-30% rises. Soils are deep, loam over dark brown, often poorly structured, clay. Main soils: Plains: <u>Sand over acidic clay - G5</u> and <u>Thick sand over clay - G3</u> or <u>Sandy loam over poorly structured brown or dark clay - F2</u> . Stony rises: <u>Shallow sandy loam over red-brown clay on calcrete - B6</u> and <u>Sand over friable brown clay on calcrete - B7</u> or <u>Sandy loam over poorly structured brown or dark clay - F2</u> and <u>Loam over brown or dark clay - F1</u> . Swamps: <u>Wet clay loam - N3</u> , <u>Deep friable gradational clay loam - M2</u> and <u>Deep hard gradational sandy loam - M4</u> .
		Rise	F2F1	C	
NWD	0.7	Plain	M2	D	Plains with loam over red clay soils and <10% rises with sand over clay and deep sand soils. Main soils: Plains: <u>Deep friable gradational clay loam - M2</u> . Sandy rises: <u>Thick sand over clay - G3</u> .
		Sandy rise	G3	M	
NwF	0.2	Plain	C5E3	V	Plains with dark clay loam or clay grading to dark clay overlying marl soils. 20-30% swamps with dark cracking clay soils; 10-30% water filled. Main soils: Plains: <u>Gradational dark clay loam - C5</u> and <u>Brown or grey cracking clay - E3</u> . Swamps: <u>Wet clay loam - N3</u> , <u>Brown or grey cracking clay - E3</u> .
		Swamp	N3E3	C	
NZA	0.3	Plain	B7	D	Plain with shallow sand over poorly structured grey clay soils. 10-30% shallow dark clay over calccreted marl soils. <10% swamps with saline, dark clay soils. Main soils: Plains: <u>Sand over friable brown clay on calcrete - B7</u> . Swamps: <u>Wet saline clay loam - N2c</u> .
		Swamp	N2	M	
OFC	0.1	Dune	I1	D	OFC Deep moderate to highly leached siliceous sands on dunes.
OFD	3.4	Low dune	I1I2	D	OFD As above, low dunes.
OFq	1.4	Low dune	I1I2	V	OFq As above low dunes with 30-60% wet sands and sand over clay in swales. Main soils: Dunes: <u>Highly leached sand - I1</u> , <u>Wet highly leached sand - I2</u> . Wet swales: <u>Wet clay loam - N3</u> , <u>Wet saline clay loam - N2c</u> and <u>Wet highly leached sand - I2</u> .
		Wet swale	N3N2 I2	L	
OHD	0.0	Low dune	I1I2	D	Low dunes with deep siliceous sands co-dominant with shallow sands over calcarenite rises. Main soils: <u>Highly leached sand - I1</u> and <u>Wet highly leached sand - I2</u> .
OPD	0.2	Dune	I2G3	D	Low dunes: deep acid sand over coffee rock or brown clay soils. Main soils: <u>Wet highly leached sand - I2</u> and <u>Thick sand over clay - G3</u> .
PCB	0.3	Plain/rise	H2O1 I2	D	Gently undulating sand plain with deep acid sand on rises, often with coffee rock in subsoils, clay subsoils occur on lower slopes



		Swamp	N3	M	and flats or swales. Dark brown loamy volcanic ash soils are co-dominant. <10% swamps with alkaline, dark loamy to peaty soils. Main soils: Plains: <u>Deep brown sand</u> - H2 , <u>Volcanic ash soil</u> - O1 and <u>Wet highly leached sand</u> - I2 . Swamps: <u>Wet clay loam</u> - N3 .
PLb	0.5	Plain	G3G5	V	Plain with deep, acid sands over brownish, often acid, clay soils with 10-20% deep siliceous bleached sand on low dunes. Main soils: Plains: <u>Thick sand over clay</u> - G3 and <u>Sand over acidic clay</u> - G5 . Dunes: <u>Highly leached sand</u> - I1 , <u>Wet highly leached sand</u> - I2 .
		Dune	I1I2	L	
PPA	3.4	Plain	I2	D	PPA Sand plain: deep bleached wet sand over clay or coffee rock PPa Plains with poorly drained deep acid sands over coffee rock or acid brownish clay. 10-20% well drained bleached sands on low dunes. PPB Gently undulating, as above, very wet swales PPE Broad depression, deep sand over brownish clay soils. PPi Plain as above, with 20-30% non-peaty acid swamps. PPj Gently undulating, as above with 20-30% non-peaty acid swamps. Main soils: Plains: <u>Wet highly leached sand</u> - I2 , <u>Thick sand over clay</u> - G3 . Dunes and rises: <u>Highly leached sand</u> - I1 and <u>Wet highly leached sand</u> - I2 . Swamps: <u>Wet clay loam</u> - N3 .
PPa	0.04	Plain	I2G3	V	
		Low dune	I1	L	
PPB	2.6	Rise	I1I2	D	
PPE	0.0	Broad depression	G3	D	
PPi	1.1	Plain	G3I2	V	
		Swamp	N3	C	
PPj	0.8	Rise	I1	V	
		Swamp	N3	C	
PQA	2.4	Plain	G3	D	
PQi	12.3	Plain	G3	V	
		Swamp	N3	C	
PQiE	2.3	Swampy plain	G3N3	D	
PQj	0.1	Rise	G3	V	
		Swamp	N3	C	
PRa	2.1	Plain	G3I2	V	
		Low dune	I1G3	L	
PRB	1.2	Plain	G3	D	
PVA	2.5	Plain	G5G3	D	
PWA	4.7	Plain	G5G3	D	Plain with deep acid, ironstone gravelly, sand, over strongly acid brownish clay; 10-30% loam over poorly structured dark brown or grey clay. <10% swamps with sand over clay soils, 10-30% water filled. Main soils: Plains: <u>Sand over acidic clay</u> - G5 and <u>Thick sand over clay</u> - G3 . Swamps: <u>Wet clay loam</u> - N3 .
		Swamp	N3	M	



PXi	3.0	Plain	G3	V	Sand plain with poorly drained deep sands over coffee rock or brown mottled clay and 30% deep dark clay loam over brown clay, also poorly drained. 10-20% swamps with dark clayey soils or water filled. Main soils: Plains: <u>Thick sand over clay</u> - G3 . Swamps: <u>Wet clay loam</u> - N3 .
		Swamp	N3	L	
Xe-	0.1	Lunette	G3	D	Lunette with clay loam over poorly structured dark grey clay soils. Main soils: <u>Thick sand over clay</u> - G3 .
XI-	0.3	Lake	WW	D	Water filled.
XqC	1.0	Swamp	N3N1 M2	D	XqC Swamps with non-peaty dark clay soils and 20-30% sandy rises with deep sand over brown clay soils.
Xqe	0.2	Swamp	N3A7	D	Xqe with low, non-sandy lunettes and hummocks. Main soils: <u>Wet clay loam</u> - N3 , <u>Peaty soil</u> - N1 , <u>Deep friable gradational clay loam</u> - M2 , <u>Calcareous clay loam on marl</u> - A7 .
XRC	0.7	Swamp	N3E3	D	XRC Swamps with dark grey clay soils, often cracking.
XRe	0.3	Swamp	N3E3	V	XRe As above with 20-30% lunettes or hummocks with clayey calcareous soils on marl and sand over dark clay soils. Main soils: Swamps: <u>Wet clay loam</u> - N3 , <u>Brown or grey cracking clay</u> - E3 . Lunettes: <u>Calcareous clay loam on marl</u> - A7 and <u>Thick sand over clay</u> - G3 .
		Lunette	A7G3	C	
XtC	0.0	Swamp	N1	D	XtC Swamps with neutral to alkaline peat soils with some deep dark grey clays.
Xte	0.1	Swamp	N1	V	Xte Swamps, as above with 20-30% lunettes with sand over poorly structured grey or brown clay soils. Main soils: Swamps: <u>Peaty soil</u> - N1 . Lunettes: <u>Thick sand over clay</u> - G3 .
		Lunette	G3	C	
XuC	1.2	Swamp	N3W W	D	XuC Swamps with mostly non-peaty wet soils, but peats occur in up to 30% of areas.
Xud	1.1	Swamp	N3	V	Xud Non-peaty swamps with 20-30% sandy rises with deep sand over brown clay soils.
		Sandy rise	G3I2	L	
Xue	0.8	Swamp	N3N1 WW	V	Xue Swamps as for XuC , 30% water filled; 20-30% lunettes with shallow dark clay on calcrete, loam over dark grey clay on calcrete or shallow loam on calcrete, soils.
		Lunette	B5	C	
Xuf	0.1	Swamp	N3N1 WW	V	Xuf Swamps as for XuC above, with stony rises and/or very shallow over calcrete. XuU Drainage depression as for XuC above, with 10-30% deep sand over grey clay soils.
		Stony rise	B3	L	
XuU	0.0	Drainage depression	N3N1	D	Main soils: Swamps and drainage depressions: <u>Wet clay loam</u> - N3 and <u>Peaty soil</u> - N1 . Lunettes: <u>Shallow dark clay loam on limestone</u> - B5 . Stony rises: <u>Shallow sandy loam on calcrete</u> - B3 .

PROPORTION codes assigned to soils within Soil Landscape Units (SLU):

- (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** Calcareous clay loam on marl (Marly Calcarosol)
Dark calcareous clay with a marly subsoil (often saline in Upper SE). Often with shells and a peaty surface.
- B2** Shallow calcareous sandy loam on calcrete (Petrocalcic Calcarosol)
Up to 40 cm calcareous loamy sand to sandy loam with variable calcrete rubble overlying calcreted calcarenite - rises.
- B3** Shallow sandy loam on calcrete (Petrocalcic Rudosol)
Medium thickness non calcareous sandy loam, often having a slight clay increase with depth, over calcreted calcarenite shallower than 50 cm - rises.
- B4** Red sandy loam over calcrete (Petrocalcic, Red Dermosol)
Medium thickness red sandy loam grading to friable red clay loam over calcreted calcarenite within 50 cm - rises.
- B5** Shallow dark clay loam on limestone (Petrocalcic, Black Dermosol)
Black clay loam to light clay over calcreted limestone at shallow depth, grading to highly calcareous clay - flats.
- B6** Shallow sandy loam over red-brown clay on calcrete (Petrocalcic, Red Kandosol)
Medium thickness sandy loam with slight ironstone gravel overlying a weakly structured reddish brown sandy clay on calcarenite within 50 cm - rises.
- B7** Shallow sand over sandy clay on calcrete (Petrocalcic, Brown Chromosol)
Medium thickness sand overlying brown friable sandy clay to clay on limestone or calcreted sandy clay within 50 cm - flats.
- C3** Gradational clay loam (Calcic / Hypercalcic Red Dermosol)
Loam to clay loam grading to friable red clay with soft Class I carbonate within 50 cm, grading to alluvium within 100 cm.
- C5** Gradational dark clay loam (Calcic-Hypercalcic Brown-Grey-Black Dermosol-Calcarosol)
Dark clay loam over abundant 'soft lime'. >10% carbonate is the cut off between this and M2 soils.
- E3** Brown or grey cracking clay (Brown-Grey Vertosol)
- F1** Loam over brown or dark clay (Brown-Dark Chromosol-Sodosol)
Topsoil >30 cm over a poorly structured subsoil, or else, subsoil structure is good. Loamy to clay loamy texture contrast soil with brown clayey subsoil. Loamy, reasonable depth A, and OK structured clay subsoil.
- F2** Sandy loam over poorly structured brown or dark clay (Brown-Dark Sodosol-Chromosol)
Topsoil <30 cm over a poorly structured subsoil. Loamy, often sandy loam, to clay loamy texture contrast soil with a sodic/dispersive/poorly structured brown clayey subsoil. Often sandy loam, usually with a bleached horizon, and thin topsoil over a poorly structured B.
- G3** Thick sand over clay (Hypercalcic, Brown Sodosol/ Chromosol)
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** Sand over poorly structured clay (Sandy Brown-Red Sodosol-Chromosol)
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.
- G5** Sand over acidic clay (Sandy Brown Kurosol)
Sandy texture contrast soil with a friable brown strongly acidic clayey to clay loamy subsoil. Very acidic soil; incipient Bh horizons; moderate depth topsoils. Some with ironstone.



- H2** Siliceous sand (Sandy Calcarosol-Tenosol)
Deep to moderate depth calcareous siliceous sand. Often with non-calcareous topsoil; can be non calcareous throughout. Sometimes the subsoil is a light sandy loam.
- H3** Deep bleached sand (Basic, Arenic, Bleached-Orthic Tenosol)
Grey sand over very thick bleached sand grading to yellow sand continuing below 100 cm.
- I1** Highly leached sand (Fragic, Pipey, Aeric Podosol)
Grey sand with a very thick bleached A2 layer, over dark brown and yellow massive soft to semi-hard clayey sand (coffee rock), grading to softer yellow and brown sand to sandy clay loam from about 80 cm.
- I2** Wet highly leached sand (Fragic, Humic, Aquic Podosol)
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.
- M2** Deep friable gradational clay loam (Red-Brown-Grey- Black Dermosol)
Deep well structured red clay loamy soil.
- M4** Deep hard gradational sandy loam (Hard Brown-Dark Kandosol- Dermosol)
Deep dark brown loamy to clay loamy soil grading to clay at depth. Hardsetting surface often with prismatic structures in the subsoil.
- N1** Peat (Organosol)
Peaty soil.
- N2c** Wet saline clay loam (Dermosolic, Salic Hydrosol)
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** Seasonally waterlogged, non to marginally saline equivalents of soils listed above, viz.:
N3c Wet **G3**
N3d Wet **B5**
N3e Wet **B7**
- O1** Volcanic ash soil (Mostly Podosols and Tenosols)
Deep volcanic ash soils and soils overlain with volcanic ash.
- WW** Water.

Further information: [DEWNR Soil and Land Program](#)

