FUR Furner Land System

Area: 681.2 km^2

Landscape: Dune corridor, stony plains and swamps extending from Furner to east of Kingston, with mainly dark coloured, fine textured soils. Occasional stony banks.

Annual rainfall: 610 – 730 mm average

Geology: Mostly Pleistocene Padthaway Formation calcareous clays, with Late Pleistocene Glanville Formation Clays and calcarenite in the north-western part.

Main soils:
B5 (29%) Shallow dark clay loam on limestone (Petrocalcic Black-Grey Dermosol)
B2 (10%) Shallow calcareous loam on calcrete (Petrocalcic Calcarosol-Rudosol)
C5 (10%) Gradational dark clay loam (Calcic-Hypercalcic Brown-Grey-Black Dermosol-Calcarosol)

Minor soils:
G3 (9%) Thick sand over clay (sandy Brown-Red Chromosol-Sodosol)
B7 (6%) Shallow sand over clay on calcrete (sandy Petrocalcic Sodosol-Chromosol)
N3 (5%) Wet soil (non to moderately saline) (Sodosolic-Calcarosolic-Dermosolic Hydrosol)
A7 (5%) Calcareous clay loam on marl (Marly Calcarosol)
M4 (4%) Deep hard gradational sandy loam (Hard Brown--Dark Kandosol- Dermosol)
E1 (3%) Black cracking clay (Black Vertosol)

Summary: Soils are commonly heavy textured dark soils, often over calcrete. Drainage is slow and inundation is common seasonally. Soils are generally fertile. Salinity becomes noticeable in the northern parts.

Soil Landscape Unit summary: Furner Land System (FUR)

SLU	% of area	Component	Main soils	Prop#	Notes
MAAA	0.1	Gently undulating plain	B3RR	D	**MAAA** Plains with very shallow sandy loam, occasionally over red clay, on calcreted calcarenite; often bare calcrete. Low dune-core topography.
MAB	0.1	Rise	B3RR	D	**MAB** Gently sloping rises; with soils as above.
MAC	0.04	Rise	B3RR	D	**MAC** Undulating rises; with soils as above. Main soils: Shallow sandy loam on calcrete - **B3** and Rock or exposed calcrete – **RR**.
M-B	0.2	Stony rise	B3RR	V	**M-B** Gently sloping stony rises with very shallow sandy loam, occasionally over red clay, on calcreted calcarenite; often bare calcrete. 10-20% swales with shallow sand to loam on poorly structured brown clay on calcrete. **M-C** Undulating rises as above. Main soils: ***Rises:*** Shallow sandy loam on calcrete - **B3** and Rock or exposed calcrete – **RR**. ***Swales:*** Sand over friable brown clay on calcrete - **B7** and Shallow sandy loam over red-brown clay on calcrete - **B6**.
		Swale	B7B6	L	
M-C	0.00	Rise	RRB3	D	
MCK	0.1	Plain	B6B3	V	Plains with shallow sandy loam, mostly over red clay, on calcrete; 10-30% with poorly structured clay subsoils. 10-20% swales with sandy loam, mostly over poorly structured brown clay, but often well structured red clay, on calcrete;
		Swale	B7B6	L	

					10-30% shallow bleached sand, often on poorly structured yellow/brown clay, on calcrete. Main soils: ***Plains:*** Shallow sandy loam over red-brown clay on calcrete - **B6** and Shallow sandy loam on calcrete - **B3**. ***Swales:*** Sand over friable brown clay on calcrete - **B7** and Shallow sandy loam over red-brown clay on calcrete - **B6**.
MDB	0.02	Rise	B4B6	D	Gently undulating rises with mostly reddish clay loam over red clay on calcrete; 10-30% deep siliceous sand rises. Main soils: Shallow red loam on limestone - **B4** and Shallow sandy loam over red-brown clay on calcrete - **B6**.
MEB	0.1	Stony rise	B3	V	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: ***Stony rises:*** Shallow sandy loam on calcrete - **B3**. ***Dunes:*** Highly leached sand - **I1** and Bleached siliceous sand - **H3**.
		Dune	I1H3	L	
MFB	0.5	Low rise	B6B3 B9	D	**MFB** 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. **MFBK** Low rises as above, with karst or solution holes and mainly very shallow sand, often bleached, on calcrete. **MFCB** Undulating rises; medium height dune core topography, with shallow reddish sandy loam grading to red clay on calcreted calcarenite. Bare calcrete is co-dominant. Main soils: ***Low rises:*** Shallow sandy loam over red-brown clay on calcrete - **B6**, Shallow sandy loam on calcrete - **B3**, Shallow sand on calcrete - **B8** and Shallow clay loam over brown or dark clay on calcrete - **B9**. ***Rises:*** Shallow red loam on limestone - **B4** and Rock or exposed calcrete – **RR**.
MFBK	0.01	Low rise	B3B8	D	
MFCB	0.1	Rise	B4RR	D	
MHB	0.2	Dune	H3	E	Gently sloping calcarenite ridges with deep bleached siliceous sands on dunes, often over brown sandy clay. Co-dominant are shallow stony rises with shallow siliceous sand on calcrete or bare rock, occasionally sandy loam on red clay on calcrete. Main soils: ***Dunes:*** Bleached siliceous sand - **H3**. ***Stony rises:*** Shallow sandy loam on calcrete - **B3** and Rock or exposed calcrete – **RR**.
		Stony range	B3RR	E	
NBB	1.8	Stony plain	B5B2	D	**NBB** Stony plain with thin black cracking clay or clay loam over calcreted marl or calcareous lagoonal clayey sediments, often with freshwater shells. **NBI** Stony plain as above, 20-30% swamps with shallow, often wet, dark clay loam and alkaline peat soils. **NBM** Stony plain as for **NBB**, with 20-30% rises with very shallow calcareous loam over calcrete, soils. **NBN** Poorly drained plain with shallow dark grey calcareous clay loam over dark clay on calcrete. 10-30% wet depressions containing variously, shallow, non-peaty, wet, dark, grey clay loam or peat. 20-30% rises with shallow loam
NBI	0.6	Stony plain	B5B2	V	
		Swamp	B2N3 N1	C	
NBM	0.8	Stony plain	B5B2	V	
		Rise	B3	C	
NBN	2.0	Plain	B5	V	
		Rise	B3	C	
		Swamp	B5B2 N3	M	

NBU	0.3	Plain	B9	E	over very thin red clay on calcrete; 10-30% very shallow calcareous loam on calcrete. 10-20% swamps with often wet, shallow dark clay loam over dark clay on calcrete, or thin calcareous grey clay loam on calcrete. **NBU** Plains with dark clay loam over yellow-grey clay, on calcrete; 10-30% shallow calcareous clay loam on calcrete. 20-30% stony rises with shallow grey calcareous clay loam on calcrete. 10-20% swamps with, often wet, dark cracking clay or clay loam over poorly structured dark clay. Main soils: ***Stony plains:*** Shallow dark clay loam on limestone - **B5** and Shallow calcareous loam on calcrete - **B2**. ***Swamps:*** Shallow calcareous loam on calcrete - **B2**, Wet clay loam - **N3**, Peaty soil – **N1**, Shallow dark clay loam on limestone - **B5** and Deep hard gradational sandy loam - **M4**. ***Rises:*** Shallow sandy loam on calcrete - **B3**. ***Plains:*** Shallow clay loam over brown or dark clay on calcrete - **B9**.
		Stony rise	B2	C	
		Swamp	N3M4	L	
NjA	0.4	Plain	B7	D	Plains with shallow sand, mostly over poorly structured brown clay on calcrete.10-30% clay loam over dark brown clay on calcrete. Main soils: Sand over friable brown clay on calcrete - **B7**.
NJA	1.2	Plain	A7C5	D	**NJA** Plains with deep clayey mostly calcareous dark grey soils over marl or dark calcareous clay; 10-30% shallow black or grey cracking clay or calcareous loam, on calcrete. **NJF** Swampy plains with deep dark cracking clay or clay loam over dark poorly structured clay with variable amounts of carbonate. **NJJ** Plains with mostly deep dark cracking clay with slight to high carbonate in subsoils, but often shallow dark cracking clays on calcrete. 10-20% swamps with wet dark clay loam on dark clay; 10-30% peat. <10% lunettes with deep dark clay loam becoming calcareous or marly with depth. **NJS** Plains with deep, mostly calcareous, grey clay loam over grey clay, on marl or calcareous dark grey clay. 10-20% swamps with wet soils as above as well as >30% peats. 10-20% sandy rises with deep sand, mostly over brown clay, but often just deep, water repellent, bleached siliceous sand. <10% stony rises with shallow reddish loam, occasionally over red clay on calcreted calcarenite. Main soils: ***Plains:*** Calcareous clay loam on marl - **A7**, Shallow dark clay loam on limestone - **B5** and Gradational dark clay loam – **C5**. ***Swamps:*** Wet clay loam - **N3** and Peaty soil – **N1**. ***Swampy plains:*** Gradational dark clay loam – **C5** and Deep friable gradational clay loam - **M2**. ***Sandy rises:*** Thick sand over clay - **G3** and Bleached siliceous sand - **H3**. ***Stony rises:*** Shallow sandy loam on calcrete - **B3**.
NJF	1.0	Swampy plain	C5M2	D	
NJJ	0.5	Plain	C5B5	V	
		Swamp	N3	L	
		Lunette	C5A7	M	
NJS	3.0	Plain	A7C5	E	
		Swamp	N3N1	L	
		Sandy rise	G3H3	L	
		Stony rise	B3	M	
NkA	0.1	Plain	G3	D	Plains with deep sand over brown clay. Main soils: Thick sand over clay - **G3**.
NKA	6.8	Plain	C5A7	D	**NKA** Plains with mostly deep, dark grey, cracking clay, over dark calcareous clay, but often calcareous grey clay on marl. **NKB** Stony plains with pedal calcareous dark grey clay loam over rubbly clay or marl.
NKB	0.4	Stony plain	A6A7	D	
NKF	0.8	Undulating plain	F2M4	V	
		Swamp	N3	L	

NKG	0.5	Swampy plain	F2M4 A7	D	**NKF** Undulating plains with dark clay loam over poorly structured dark grey clay. 10-20% swamps with wet soils as above and 10-30% peat. **NKG** Swampy plains with dark clay loam over poorly structured dark grey clay; or calcareous clay loam over calcareous clay on marl. **NKS** Plains with soils as above; 20-30% swamps with wet soils as above and 10-30% peat. 10-20% sandy rises with deep sand over brown clay. **NKU** Undulating stony plains with pedal, dark grey, clay loam grading to grey, often poorly structured, clay on calcrete. 10-20% swamps with wet soils as above or occasionally, peat. **NKV** Plains with dark grey cracking clay over poorly structured dark clay, with variable carbonates. 10-20% swamps with wet clay loam on dark clay and occasionally peat or shallow soils on calcrete. <10% stony rises with pedal, dark grey, clay loam grading to grey, often poorly structured, clay on calcrete. <10% sandy rises with deep sand over brown clay. Main soils: ***Plains:*** Gradational dark clay loam – **C5** and Calcareous clay loam on marl - **A7**. ***Stony plains:*** Gradational calcareous clay - **A6** and Calcareous clay loam on marl - **A7**. ***Swampy plains:*** Sandy loam over poorly structured brown or dark clay - **F2**, Deep hard gradational sandy loam - **M4** and Calcareous clay loam on marl - **A7**. ***Sandy rises:*** Thick sand over clay - **G3**. ***Swamps:*** Wet clay loam - **N3**. ***Undulating stony plains and rises:*** Shallow dark clay loam on limestone - **B5** and Sand over friable brown clay on calcrete - **B7**.
NKS	0.2	Plain	F2M4 A7	E	
		Swamp	N3	C	
		Sandy rise	G3	L	
NKU	0.4	Undulating stony plain	B5B7	V	
		Swamp	N3	L	
NKV	8.1	Plain	M4C5	V	
		Swamp	N3	L	
		Stony rise	B5B7	M	
		Sandy rise	G3	M	
NlA	1.2	Plain	E3E1	D	**NlA** Gilgaied plains with deep black or grey cracking clay. **Nlb** Stony plains with mostly shallow black or grey cracking clay over calcrete, occasionally calcareous surface soils. Moderately saline, <2% patches of high salinity. **NlB** Stony plains as above and with deep cracking clay soils, non-saline. **NlC** Gilgaied plains with deep black or grey cracking clay. <10% stony rises with shallow grey cracking clay loam, often calcareous, over calcrete. **Nli** Plains with mostly shallow, but often deep, black or grey cracking clay over calcrete or calcareous clay. 20-30% clayey swamps with slight to moderate salinity. **NlI** Plains as above; 10-20% non-saline dark clayey swamps; <10% stony rises with shallow, mostly calcareous cracking grey clay, mostly on calcrete, but also often deep. **NlM** Plains with deep cracking grey clay grading to calcareous clay, occasionally marl. 20-30% stony rises with shallow calcareous grey clay loam on calcrete; or often, bare calcrete. **NlP** Gilgaied plains with deep black or grey cracking clay, often calcareous at depth. 20-30% sandy rises with deep siliceous, often bleached sand; 10-30% are moderately drained with brown clay or coffee rock in subsoils. Main soils: ***Plains:*** Brown or grey cracking clay – **E3** and Black cracking clay - **E1**. ***Stony plains:*** Shallow dark clay loam on limestone - **B5** and
Nlb	3.4	Stony plain	B5	D	
NlB	2.2	Stony plain	B5E1	D	
NlC	0.6	Plain	E3E1	D	
		Stony rise	B2B5	M	
Nli	0.2	Stony plain	B5E1	V	
		Swamp	N2N3 E1	C	
NlI	0.3	Stony plain	B5E1	V	
		Swamp	N3E1 M2	L	
		Stony rise	B2B5	M	
NlM	0.4	Plain	C5	V	
		Stony rise	B2RR	C	
NlP	0.2	Plain	E3E1 C5	V	
		Sandy rise	I1H3	C	

					Black cracking clay - **E1**. ***Stony rises:*** Shallow calcareous loam on calcrete - **B2** and Shallow dark clay loam on limestone - **B5**. ***Swamps:*** Wet clay loam - **N3**, Wet saline clay loam – **N2c,** Black cracking clay - **E1** and Deep friable gradational clay loam - **M2**. ***Sandy rises:*** Highly leached sand - **I1** and Bleached siliceous sand - **H3**.
NMF	0.8	Plain	F2G3	V	Plains with deep loam or sand over poorly structured brown clay soils. **NMF** 10-20% swamps with clay loam to clay over dark brown or grey clay, soils. **NMK** As for **NMF** also with <10% sandy rises with sand over brown clay soils. Main soils: ***Plains:*** Sandy loam over poorly structured brown or dark clay - **F2** and Thick sand over clay - **G3**. ***Swamps:*** Wet clay loam - **N3** and Deep friable gradational clay loam - **M2**. ***Sandy rises:*** Thick sand over clay - **G3**, Bleached siliceous sand - **H3** and Wet highly leached sand - **I2**.
		Swamp	N3M2	L	
NMK	1.1	Plain	F2G3	V	
		Swamp	N3M2	L	
		Sandy rise	G3H3 I2	M	
NnD	4.0	Plain	G3	D	**NnD** Plains with deep sand over brown clay; 10-30% shallow dark clay loam over dark clay on calcrete. <10% sandy rises with deep siliceous bleached sand, often over brown clay. **NnF** Plains with shallow sand over poorly structured brown clay on calcrete or shallow dark clay loam on dark clay on calcrete. 10-20% swamps with soils as above, often calcareous. **NnG** Depression with soils as for **NnF** swamps. **NnM** Plains with shallow, often calcareous, dark, cracking clay on calcrete. Main soils: ***Plains and swamps:*** Thick sand over clay - **G3**, Sand over friable brown clay on calcrete - **B7** and Shallow dark clay loam on limestone - **B5**. ***Sandy rises:*** Highly leached sand - **I1**, Bleached siliceous sand - **H3** and Thick sand over clay - **G3**. ***Stony rises:*** Shallow calcareous loam on calcrete - **B2**.
		Sandy rise	I1H3 G3	M	
NnF	5.5	Plain	B7B5	V	
		Swamp	B7B5	L	
NnG	0.8	Depression	B7B5	D	
NnM	0.2	Plain	B5B2	V	
		Stony rise	B2	C	
NpU	2.5	Plain	E1C5	V	**NpU** Plains with deep, black cracking clay; or clay loam over dark clay. 20-30% stony rises with shallow dark clay loam over dark clay on calcrete. 10-20% swamps with often wet, black or grey clays; 10-30% peat. **NpV** Plains with deep, black cracking clay; or clay loam over dark clay. 20-30% stony rises with shallow dark clay loam over dark clay on calcrete. 10-20% swamps with often wet, black or grey clays; 10-30% peat. 10-20% sandy rises with deep sand over brown clay or deep bleached water repellent siliceous sand. Main soils: ***Plains:*** Black cracking clay - **E1** and Gradational dark clay loam – **C5**. ***Stony rises:*** Shallow dark clay loam on limestone - **B5** and Shallow clay loam over brown or dark clay on calcrete - **B9**. ***Swamps:*** Wet clay loam - **N3**, Black cracking clay - **E1** and Brown or grey cracking clay – **E3**. ***Sandy rises:*** Thick sand over clay - **G3** and Wet highly leached sand - **I2**.
		Stony rise	B5B9	C	
		Swamp	N3E1 E3	L	
NpV	0.02	Plain	E1C5	E	
		Stony rise	B5B9	C	
		Swamp	N3E1 E3	L	
		Sandy rise	G3I2	L	
NQF	0.3	Plain	C5E3	V	**NQF** Plains with deep, black or dark grey cracking clay soils mostly with marly subsoils. 10-20% swamps with wet soils as
		Swamp	N3	L	

NQU	0.2	Plain	C5E3	V	above. **NQU** Plains with soils and swamps as above, but also with 10-20% stony rises with shallow grey clay loam over grey clay; or shallow red clay loam over red clay; on calcrete. Main soils: ***Plains:*** Gradational dark clay loam – **C5** and Brown or grey cracking clay – **E3**. ***Swamps:*** Wet clay loam - **N3**. ***Stony rises:*** Shallow dark clay loam on limestone - **B5**, Shallow sandy loam over red-brown clay on calcrete - **B6** and Shallow red loam on limestone - **B4**.
		Swamp	N3	L	
		Stony rise	B5B6 B4	L	
NSA	1.7	Plain	G3G5	V	**NSA** Plains with deep acid sand over, often acid, brown clay; 10-30% deep dark clay loam over dark clay on non-swampy flats or depressions. 10-20% wet swamps, water filled, with deep sand over brown clay, or with dark cracking clay soils. **NSO** Plains with deep acid sand over, occasionally acid, brown clay. 10-20% stony rises with shallow sandy loam over poorly structured brown clay, or red clay, on calcrete; 10-30% bare calcrete or shallow sandy loam on calcrete. 10-20% sand rises with deep water repellent, bleached siliceous sand, often over brown clay. <10% swamps with mostly wet, loam over poorly structured dark clay. **NSQ** Plains with shallow sandy loam over grey, or poorly structured brown, clay on calcrete. <10% swamps with mostly wet, loam or sandy loam over brown clay. Main soils: ***Plains:*** Thick sand over clay - **G3** and Sand over acidic clay - **G5** or Shallow dark clay loam on limestone - **B5** and Sand over friable brown clay on calcrete - **B7**. ***Sandy rises:*** Wet highly leached sand - **I2**, Bleached siliceous sand - **H3** and Thick sand over clay - **G3**. ***Swamps:*** Wet clay loam - **N3**, Thick sand over clay - **G3** and Black cracking clay - **E1**. ***Stony rises:*** Sand over friable brown clay on calcrete - **B7** and Shallow red loam on limestone - **B4**.
		Sandy rise	I2H3 G3	L	
		Swamp	N3G3 E1	L	
NSO	0.6	Plain	G3	E	
		Stony rise	B7B4	L	
		Sandy rise	I2H3 G3	L	
		Swamp	N3G3	M	
NSQ	0.1	Plain	B5B7	D	
		Swamp	N3G3	M	
NTA	0.03	Plain	G3	D	Plains with mostly deep acid sands over acid yellow-brown clay. Main soils: ***Plains:*** Thick sand over clay - **G3**.
NuA	0.4	Plain	F2N3	D	Plains with wet non-cracking clay soils; 10-30% sand over brown clay on low rises. Main soils: ***Plains:*** Sandy loam over poorly structured brown or dark clay - **F2** and Wet clay loam - **N3**.
NUP	5.5	Plain	G3B7	V	Plains with deep usually acid, sand over brown clay, often poorly structured and shallow on calcrete. 10-20% sandy rises with deep water repellent bleached siliceous sand. Main soils: ***Plains:*** Thick sand over clay - **G3** and Sand over friable brown clay on calcrete - **B7**. ***Sandy rises:*** Bleached siliceous sand - **H3** and Highly leached sand - **I1**.
		Sandy rise	H3I1	L	
NxA	1.3	Plain	B5B2	D	**NxA** Plains with shallow dark clay loam over dark clay on calcrete, or calcareous clay loam on calcrete. Occasionally soils are deep, overlying marl. **NxB** Stony plains, with soils as above. **NxI** Plains as for **NxA**; 10-20% swamps with wet dark clay loam over dark clay; or peat also with 10-30% dark clay
NxB	0.5	Stony plain	B5B2	D	
NxI	3.3	Plain	B5B2	V	
		Swamp	N3N1	L	
NxJ	3.6	Plain	B5B2	V	
		Swamp	N3N1	C	

			M2		loam over dark clay, often shallow on calcrete.
NxM	0.8	Swampy plain	B5B2	V	**NxJ** Plains as for **NxA**; 20-30% swamps with wet dark clay loam over dark clay; peat; or deep dark clay loam over dark clay.
		Lunette	B3	C	
NxN	0.3	Plain	B5B2	V	**NxM** Swampy plains as for **NxA**; 20-30% lunettes with shallow loam, occasionally on red clay, on calcrete.
		Stony rise	B3	L	**NxN** plains as above, 10-20% stony rises withvery shallow loam, mostly calcareous on calcrete, but also occasionally on red clay on calcrete. Main soils: ***Plains:*** Shallow dark clay loam on limestone - **B5** and Shallow calcareous loam on calcrete - **B2**. ***Swamps:*** Wet clay loam - **N3**, Peaty soil – **N1** and Deep friable gradational clay loam - **M2**. ***Lunettes and stony rises:*** Shallow sandy loam on calcrete - **B3**.
NXP	0.3	Old lake bed	G3G2	V	Old lake bed with deep sand, often bleached, over brown clay. 10-20% sandy rises with deep sand, mostly over brown clay but also deep bleached siliceous sand. Main soils: ***Old lake bed:*** Thick sand over clay - **G3** and Bleached sand over sandy clay loam - **G2**. ***Sandy rise:*** Thick sand over clay - **G3** and Wet highly leached sand - **I2**.
		Sandy rise	G3I2	L	
NYA	5.0	Plain	B5B2	D	**NYA** Plains with shallow to moderately deep, dark grey cracking clay on calcrete. **NYB** Stony plains with very shallow, dark grey cracking clay on calcrete. 10-30% bare calcrete. **NYf** Swampy plains, moderately saline, with shallow to moderately deep, dark grey cracking clay on calcrete. 10-30% deep cracking clay or clay loam over dark clay on moderately to highly calcareous clay. **NYG** Swampy plains, non-saline, as for **NYf** above. 20-30% lunettes with shallow loam, occasionally over red clay on calcrete **NYI** Stony plains with very shallow, dark grey cracking clay on calcrete. 20-30% swamps with deep, mostly wet, dark cracking clay soils. **NYJ** Stony plains as above; 10-20% swamps as above. <10% stony rises with soils as on plains. Main soils: ***Plains:*** Shallow dark clay loam on limestone - **B5** and Shallow calcareous loam on calcrete - **B2**. ***Lunettes and stony rises:*** Shallow sandy loam on calcrete - **B3** and Shallow dark clay loam on limestone - **B5**. ***Swamps:*** Wet clay loam - **N3** and Deep friable gradational clay loam - **M2**.
NYB	2.6	Stony plain	B2B5	D	
NYf	0.3	Swampy plain	B5	D	
NYG	0.7	Swampy plain	B5	V	
		Lunette	B3	C	
NYI	10.9	Stony plain	B5	V	
		Swamp	N3M2	C	
NYJ	0.4	Stony plain	B5	V	
		Swamp	N3M2	L	
		Stony rise	B5	M	
NzF	2.3	Plain	G4G3	V	**NzF** Plains with thin or thick sand over poorly structured dark brown clay. 10-20% swamps with, often wet, dark clay loam to clay over dark clay or grey cracking clay soils. **NzP** Plains as above, but with 20-30% sandy rises with deep sand, mostly over brown clay, soils. Main soils: ***Plains:*** Sand over yellow and brown clay - **G4**, Thick sand over clay - **G3** and Sandy loam over poorly structured brown or dark clay - **F2**. ***Swamps:*** Wet clay loam - **N3**, Deep hard gradational sandy loam - **M4** and Brown or grey cracking clay – **E3**.
		Swamp	N3M4 E3	L	
NzP	0.2	Plain	G4F2	V	
		Sandy rise	G3	C	

					Sandy rises: Thick sand over clay - **G3**.
NZK	0.4	Plain	G3	V	**NZK** Plains with deep, water repellent, acid sand over brown clay, occasionally poorly structured. 20-30% sandy rises with acid sand over acid brown clay, or weak coffee rock. 10-20% swamps with wet, sandy loam over clay soils, 10-30% calcareous loam grading to calcareous clay on calcareous clay, marl or calcrete. **NZP** Plains as above, with 10-20% sandy rises as above. Main soils: ***Plains:*** Thick sand over clay - **G3**. ***Sandy rises:*** Sand over acidic clay - **G5** and Wet highly leached sand - **I2**.
		Sandy rise	G5I2	C	
		Swamp	N3	L	
NZP	0.6	Plain	G3	V	
		Sandy rise	G5I2	L	
OHB	0.04	High dune	I1H3	D	High dunes with deep, water repellent, bleached, acid, siliceous sands. <10% stony rises with sandy loam on calcrete; 10-30% over red clay or bare calcrete. Main soils: ***High dunes:*** Highly leached sand - **I1** and Bleached siliceous sand - **H3**. ***Stony rises:*** Shallow sandy loam on calcrete - **B3**.
		Stony rise	B3	M	
PBi	0.1	Plain	H3I2	V	Sand plains with deep well to moderately drained bleached siliceous sand; occasionally wet in swales. 10-20% swamps with deep wet poorly drained siliceous sand over coffee rock or brown clay. Main soils: ***Plains:*** Bleached siliceous sand - **H3** and Wet highly leached sand - **I2**. ***Swamps:*** Wet clay loam - **N3** and Wet highly leached sand - **I2**.
		Swamp	N3I2	L	
VeP	0.6	Plain	B5	E	Plains with shallow dark cracking clay on calcreted lagoonal sediments or marl. Co-dominant stony rises have shallow sand over calcrete. Main soils: ***Plains:*** Shallow dark clay loam on limestone - **B5**. ***Stony rises:*** Shallow sandy loam on calcrete - **B3**.
		Stony rise	B3	E	
Xd-	0.1	Lunette	B2B5	D	Lunettes with shallow, mostly calcareous clay loam, often over dark clay, on calcrete. Main soils: ***Lunettes:*** Shallow calcareous loam on calcrete - **B2** and Shallow dark clay loam on limestone - **B5**.
XRC	1.8	Swamp	N3	D	**XRC** Swamps with wet dark, cracking clay soils with minor peats. **XRD** Swamps with marginally saline, cracking clay soils with minor peats. **XRf** Swamps as above, with 10-20% stony rises with shallow dark clay loam grading to clay on calcrete or calcareous clay. **XRJ** Creek flat, swampy wet dark, cracking clay soils with minor peats. **XRO** Swamps as above, with 10-20% stony rises with shallow dark clay loam grading to clay on calcrete or calcareous clay. Main soils: ***Swamps and creek flats:*** Wet clay loam - **N3**. ***Stony rises:*** Shallow dark clay loam on limestone - **B5** and Shallow calcareous loam on calcrete - **B2**.
XRD	0.1	Swamp	N3	D	
XRf	0.1	Swamp	N3	V	
		Stony rise	B5B2	L	
XRJ	0.01	Creek flat	N3	D	
XRO	0.02	Swamp	N3	D	
XtC	0.1	Swamp	N1	D	**XtC** Peat swamps.

Xtf	0.2	Swamp	B5N3	V	**Xtf** Swamps with shallow, often wet, clay loam grading to clay on calcrete. Minor peat soils. 20-30% rises with shallow calcareous loam or siliceous sand over calcrete. Main soils: ***Swamps:*** Peaty soil – **N1**, Shallow dark clay loam on limestone - **B5** and Wet clay loam - **N3**. ***Rises:*** Shallow calcareous loam on calcrete - **B2** and Shallow sandy loam on calcrete - **B3**.
		Rise	B2B3	C	
XuC	0.1	Swamp	N3	D	**XuC** Swamps with non-peaty wet soils **Xue** Swamps with wet, dark clay loam over dark clay, 10-30% water filled. 20-30% rises and hummocks, with deep dark clay loam over, often poorly structured dark clay; occasionally shallow on calcrete. **Xuf** Swamps as above; 20-30% stony rises with shallow often calcareous, grey clay loam, often over dark grey clay, on calcrete. Main soils: ***Swamps:*** Wet clay loam - **N3**. ***Rises:*** Deep friable gradational clay loam - **M2** and Deep hard gradational sandy loam - **M4**. ***Stony rises:*** Shallow calcareous loam on calcrete - **B2**, Shallow sandy loam on calcrete - **B3** and Shallow dark clay loam on limestone - **B5**.
Xue	0.4	Swamp	N3	V	
		Rise	M2M4	C	
Xuf	0.2	Swamp	N3	V	
		Stony rise	B2B3 B5	C	
XxC	0.01	Swamp	N1N3 WW	D	**XxC** Swamps with deep acid peats, wet organic loam over clay, or water filled.
Xxe	0.1	Swamp	N1N3 WW	V	**Xxe** Swamps as above; 20-30% lunettes with shallow loam, occasionally over red clay, on calcrete. Main soils: ***Swamps:*** Peaty soil – **N1** and Wet clay loam - **N3**. ***Lunettes:*** Shallow sandy loam on calcrete - **B3**.
		Lunette	B3	C	
ZD-	0.04	Salt lake	N2	D	Lake bed with bare salt crust. Highly saline clay loamy soils. 10-30% inundated. Main soils: Wet saline clay loam - **N2c**.

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:

A6 Gradational calcareous clay loam (Pedal Hypercalcic-Lithocalcic Calcarosol on clayey subsoil)
Calcareous loams to clay loams grading into brown-red clay. Often rubbly.

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.

B8 Shallow sand on calcrete (Petrocalcic, Bleached-Leptic Tenosol)
Thick bleached sand over calcreted calcarenite within 50 cm - rises.

B9 Shallow clay loam over brown or dark clay on calcrete (Clay loamy Petrocalcic Sodosol)
Poorly structured, often coarse prismatic, clay loam grading to brown or dark clay on calcrete.

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.

E1 Black cracking clay (Black Vertosol)

E3 Brown or grey cracking clay (Brown-Grey Vertosol)

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.

G2 Bleached sand over sandy clay loam (sandy Brown-Red Chromosol)
Sandy texture contrast soil with a bleached A2 and a friable brown-red sandy clay loam to sandy loam subsoil.

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.

H3 Deep bleached sand (Basic, Arenic, Bleached-Orthic Tenosol)
Grey sand over a 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**

RR Bare rock

WW Water

Further information: DEWNR Soil and Land Program