DMR Derrymore Land System

Area: 107.7 km^2

Landscape: Moderately well drained flat to gently undulating plains south west of Kalangadoo, with areas of swamp. Abuts the Kalangadoo Land System to the east and is bounded on the southern side by the highlands of the Edward and Mt. Burr Land Systems and the swampy Young Land System. The swampy plains of the Krongart Land System adjoin to the north-west. (Formerly part of the Kalangadoo Land System but this area doesn't have low beach ridges ie. to the west and south of those components.) This area is at the southern end of more clayey environments of the inter-dune corridor plains of the South East. The sand spreads to the east and the clay plains inter-tongue in the Derrymore Land System.

Annual rainfall: 730 – 785 mm average

Geology: Pleistocene Padthaway lagoonal clays underlie the land system, which is overlain by aeolian sediments of the Pleistocene-Holocene Molineaux Sand.

Main soils:
G3 (37%) Thick sand over clay (sandy Brown-Red Chromosol-Sodosol)
I2 (25%) Wet highly leached sand (Aquic or Semi-Aquic Podosol)

Minor soils:
M2 (16%) Deep friable gradational clay loam (Red-Brown-Grey- Black Dermosol)
N3 (8%) Wet soil (non to moderately saline) (Sodosolic-Calcarosolic-Dermosolic Hydrosol)
E3 (6%) Brown or grey cracking clay (Brown-Grey Vertosol)

Summary: The soils are variable, but the deep sands and sand over clay soils are the largest groups, which have fertility, wind erosion and to some extent, waterlogging limitations, which require careful management. The heavier textured or clayey soils, which collectively cover over 20% of the land system, while being more fertile, are more subject to long-term wetness and flooding.

Soil Landscape Unit summary: Derrymore Land System (DMR)

SLU	% of area	Component	Main soils	Prop#	Notes
MHB	0.3	Rise	B6B3I1	D	Gently sloping calcarenite ridge with shallow sand, often over red sandy clay over calcrete. 10-20% deep bleached siliceous sands on dunes. 10-30% rock outcrop and deep yellow bleached sands. Main soils: Shallow sandy loam over red-brown clay on calcrete - **B6**, Shallow sandy loam on calcrete - **B3** and Highly leached sand - **I1**.
MRA	0.4	Plain	B3B6	D	Very gently sloping calcarenite ridge with shallow sandy loam over red clay over calcrete. Small karst/sinkholes <10%. Main soils: ***Plains:*** Shallow sandy loam on calcrete - **B3** and Shallow sandy loam over red-brown clay on calcrete - **B6**. ***Karst depressions:*** Wet clay loam - **N3**.
		Karst depression	N3	M	
MWB	1.8	Rise	B3B7	D	Gently sloping low calcarenite rise with shallow sandy loam, often on brown poorly structured clay, but with 10-30% red clay subsoils. Deep siliceous sands occur on low dunes. Main soils: Shallow sandy loam on calcrete - **B3** and Sand

					over friable brown clay on calcrete - **B7**.
NpF	0.9	Plain	E1E3	V	Clay plains with dark cracking clay soils. 10-20% swamps underlain with similar clays; not peaty. Main soils: ***Plains:*** Black cracking clay - **E1** and Brown or grey cracking clay – **E3**. ***Swamps:*** Wet clay loam - **N3**, Black cracking clay - **E1** and Brown or grey cracking clay – **E3**.
		Swamp	N3E1 E3	L	
NtF	0.7	Plain	F2N3	V	Plains with deep, clay loam over dark poorly structured clay soils, 20-30% swamps with non-peaty wet clay soils. Main soils: ***Plains:*** Sandy loam over poorly structured brown or dark clay - **F2** and Wet clay loam - **N3**. ***Swamps:*** Wet clay loam - **N3**.
		Swamp	N3	C	
NuA	0.7	Plain	M4F2 N3	D	Plains with deep poorly structured, often cracking clays. 30%Wet flats with dark clays. 10-30% deep sand over poorly structured dark clay on rises. Main soils: Deep hard gradational sandy loam - **M4**, Sandy loam over poorly structured brown or dark clay - **F2** and Wet clay loam - **N3**.
OFD	0.1	Low dune	I1I2	D	Deep moderately to highly leached siliceous sands on low dunes, with minor occurrences of thin sand over brown clay often on calcreted calcarenite. Main soils: Highly leached sand - **I1**, Wet highly leached sand - **I2**.
OKD	0.1	Dune	I1I2	D	Low dunes with deep acid sand soils with brown clay at depth. Well drained on crests, moderate to poorly drained lower slopes. Main soils: Highly leached sand - **I1**, Wet highly leached sand - **I2**.
PBB	0.3	Rise	I1	D	Gently undulating sand plains with well-drained, deep, leached siliceous sands and 20-30% poorly-drained, deep sands which are underlain by impervious clays or coffee rock. Main soils: Highly leached sand - **I1**.
PFj	3.5	Rise	I1H3 G3	V	Gently undulating rises & plains with deep poorly drained acid sand, usually over poorly structured clay. 10-20% swamps with non-peaty, sandy loam over brown clay soils. Main soils: ***Rises:*** Highly leached sand - **I1**, Bleached siliceous sand - **H3** and Thick sand over clay - **G3**. ***Plains:*** Wet highly leached sand - **I2**, Wet clay loam - **N3** and Thick sand over clay - **G3**. ***Swamps:*** Wet clay loam - **N3**.
		Plain	I2N3 G3	L	
		Swamp	N3	L	
PKB	0.5	Plain	I2H3	D	Gently undulating sand plain with poorly to moderately well drained deep siliceous acid sands, with coffee rock or clay subsoils. Main soils: Wet highly leached sand - **I2** and Bleached siliceous sand - **H3**.
PLB	2.8	Rise	I2G3	D	**PLB** Gently sloping rises with deep acid sands, mostly over acid yellow/brown clay. <10% swampy plains with acid peats and non-peaty sandy loam wet soils. **PLj** As for PLb with 10-20% swamps with non-peaty sandy loam over clay soils. Main soils: ***Rises:*** Thick sand over clay - **G3** and Wet highly leached sand - **I2**. ***Swamps:*** Wet clay loam - **N3** and Peaty soil – **N1**.
PPA	5.6	Plain	G3	D	**PPA** Plain with acid sand over acid yellow-brown clay soils and deep acid poorly drained sands with coffee rock on subsoils. **PPb** Gently undulating sand plain with deep bleached wet
PPb	3.7	Plain	G3I2	V	
		Dune	I1I2	L	
		Swamp	N3	L	

PPB	3.3	Rise	G3I2	D	sand over clay or coffee rock, with 10-20% well drained siliceous sand on rises. 10-20% very wet swales, with deep gradational clay loam on dark clay soils. **PPB** Gently undulating sandy rises with soils as for **PPb** plains. **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:*** Thick sand over clay - **G3**, Highly leached sand - **I1** and Wet highly leached sand - **I2**. ***Dunes:*** Highly leached sand - **I1** and Wet highly leached sand - **I2**. ***Swamps:*** Wet clay loam - **N3**.
PPi	6.6	Plain	G3I2	V	
		Swamp	N3	L	
PPj	0.9	Plain/Rise	I1I2	V	
		Swamp	N3	C	
PQA	12.2	Plain	G3	D	**PQA** Sand plain with mostly deep moderately well drained sand over brown clay on low rises which also have 10-30% deep siliceous sand. **PQi** As above with 10-20% swamps with wet sandy soils and occasionally dark clay soils. **PQj** Gently undulating as for **PQi**. Main soils: ***Plains:*** Thick sand over clay - **G3**. ***Swamps:*** Wet clay loam - **N3**.
PQi	3.9	Plain	G3	V	
		Swamp	N3	C	
PQj	1.2	Plain/rise	G3	V	
		Swamp	N3	C	
PXA	45.0	Plain	I2G3 M2	D	**PXA** Sand plain with poorly drained deep sands over coffee rock or brown mottled clay and 30% deep dark clay loam to clay, also poorly drained. **PXi** As above with 10-20% more swamps with dark clayey soils. Main soils: ***Plains:*** Wet highly leached sand - **I2**, Thick sand over clay - **G3** and Deep friable gradational clay loam - **M2**. ***Swamps:*** Wet clay loam - **N3**.
PXi	0.5	Plain	I2G3 M2	V	
		Swamp	N3	L	
Xq-	0.9	Swamp	N3	D	Swamps with non-peaty dark clay soils, 10-30% water filled. Main soils: Wet clay loam - **N3**.
XQ-	0.2	Swamp	N3M2 E1	D	**XQ-** Swampy flats with dark brown clay or clay loam over clay soils. **XQC** Swamps as above. Main soils: Wet clay loam - **N3**, Deep friable gradational clay loam - **M2** and Black cracking clay - **E1**.
XQC	1.1	Swamp	N3M2 E1	D	
XuC	0.8	Swamp	N3	D	**XuC** Swamps with mostly non-peaty wet soils, but peats occur in up to 30% of areas. **Xud** Non-peaty swamps with 20-30% sandy rises with deep sand over brown clay soils. Main soils: ***Swamps:*** Wet clay loam - **N3**. ***Sandy rises:*** Wet highly leached sand - **I2** and Wet clay loam - **N3**.
Xud	1.8	Swamp	N3	V	
		Sandy rise	I2N3	C	

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:

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.

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.

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.

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.

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.

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

N3 Seasonally waterlogged, non to marginally saline equivalents of soils listed above, viz.:
N3c Wet **G3**
N3d Wet **B5**
N3e Wet **B7**

Further information: DEWNR Soil and Land Program