KGT Kingston Land System

Area: 42.1 km^2

Landscape: This land system consists of a series of low, parallel coastal dunes, alternating with swamps, near Kingston, SE.

Annual rainfall: 615 – 650 mm average

Geology: Semaphore Sand Member of the Holocene Saint Kilda Formation

Main soils:
H1 (38%) Carbonate sand (Shelly-Supravescent Calcarosol-Rudosol)
H2 (32%) Calcareous siliceous sand (sandy Calcarosol-Tenosol)
N2 (11%) Saline soil (Salic-Hypersalic Hydrosol)

Minor soils:
N3 (8%) Wet soil (non to moderately saline) (Sodosolic-Calcarosolic-Dermosolic Hydrosol)
M4 (6%) Deep hard gradational loam (Hard Brown--Dark Kandosol- Dermosol)

Summary: The coastal sands have high wind erosion risks where conventional broad acre land uses are practised. Fertility problems are inherent; particularly trace element deficiencies, such as cobalt and manganese. Poor drainage, waterlogging and flooding problems occur in a significant number of soils, with associated land management difficulties. Salinity is common in the wet soils of the flats.

Soil Landscape Unit summary: Kingston Land System (KGT)

SLU	% of area	Component	Main soils	Prop#	Notes
WEE	66.3	Dune	H1H2	D	**WEE** Low dunes, mostly vegetated and stable, with deep shelly calcareous sand or calcareous siliceous sand. <10% swales with wet deep sands or occasionally, peat. **WEe** Active, bare, low coastal dunes and sand spreads, as above. **WEW** Complex of vegetation-fixed dunes and 20-30% beaches with soils as above. Main soils: ***Dunes:*** Shell sand - **H1** and Deep brown sand - **H2**. ***Swales:*** Wet clay loam - **N3**.
		Swale	N3	M	
WEe	0.3	Dune	H1H2	D	
WEW	5.1	Dune	H1H2	V	
		Beach	H1H2	C	
ZD-	5.7	Salt lake	N2	D	Salt lakes, with bare salt crusts, occasionally water filled. Highly saline dark clay loamy surface soils. Main soils: Wet saline clay loam - **N2c**.
ZS-	1.3	Salt pan	N2A7	D	Salt pan with bare salt crusts and dark gradational calcareous clay loam over clay on marl. 10-30% non-saline, wet soils or deep dark clay loam over poorly structured dark clay. Main soils: ***Salt lake bed:*** Wet saline clay loam - **N2c** and Calcareous clay loam on marl - **A7**.
Zy-	21.2	Swamp	N3N2 M4	V	Complex of swamps and lunettes. Swamps with moderately saline, mostly wet, dark cracking clay; 10-30% water filled or calcareous clay on marl. 10-20% lunettes with dark clay loam, often over dark clay, on
		Lunette	B5B9	L	

					calcrete. Main soils: ***Swamps:*** Wet clay loam - **N3**, Wet saline clay loam - **N2c** and Deep hard gradational sandy loam - **M4**. ***Lunettes:*** Shallow dark clay loam on limestone - **B5** and Shallow clay loam over brown or dark clay on calcrete - **B9**.

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 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.

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.

B9 Shallow clay loam over brown or dark clay on calcrete (Clay loamy Petrocalcic Sodosol)

H1 Shell sand (Shelly Rudosol)
Very thick shell sand with no profile development other than slight organic darkening at the surface.

H2 Deep brown sand (Petrocalcic, Brown-Orthic Tenosol)
More than 100 cm brown sand over calcrete.

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.

N2 Swamp soil (Calcarosolic, Hypersalic Hydrosol)
Medium thickness dark grey calcareous loam becoming paler coloured with depth over a very highly calcareous light grey clay loam with saline water table in rubbly marl at about 50 cm.

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