NOL Noolook Land System

Area: 100.8 km^2

Landscape: Plains and low range flanking the eastern side of the Woakwine Land System at its northern extremity, with sand cover on calcarenite which outcrops frequently.

Annual rainfall: 635 – 675 mm average

Geology: Calcreted calcarenite on stranded beach ridges of the Pleistocene Bridgewater Formation

Main soils:
B8 (24%) Shallow bleached sand on calcrete (sandy Petrocalcic Rudosol-Tenosol)
B6 (23%) Shallow loam over red-brown clay on calcrete (Petrocalcic Red Chromosol-Kandosol)
B3 (18%) Shallow sandy loam on calcrete (Petrocalcic Red Tenosol-Kandosol-Rudosol)
H3 (14%) Bleached siliceous sand (sandy Bleached Tenosol)

Minor soils:
RR (8%) Bare calcreted calcarenite
B7 (3%) Shallow sand over clay on calcrete (sandy Petrocalcic Sodosol-Chromosol)
B1 (3%) Shallow highly calcareous sandy loam on calcrete (Supravescent-Shelly Petrocalcic Calcarosol-Rudosol)

Summary: Well drained sandy soils are predominant, usually underlain with calcreted calcarenite, often shallowly. Limitations are mainly low moisture holding capacity and rockiness in places. Forestry and viticulture are extensive land uses.

Soil Landscape Unit summary: Noolook Land System (NOL)

SLU	% of area	Component	Main soils	Prop#	Notes
MAB	1.4	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: Shallow sandy loam on calcrete - **B3** and Rock or exposed calcrete – **RR**.
MBA	4.3	Plain	B3B8	D	**MBA** Plains with shallow sand, often bleached, over calcrete. **MBB** Gently undulating rises with mostly deep siliceous sand but often, shallow sand, often over red clay, on calcreted calcarenite; 10-30% have shallow shelly sand. 10-20% swales with deep siliceous sand, which is often calcareous. Main soils: ***Plains:*** Shallow sandy loam on calcrete - **B3** and Shallow sand on calcrete - **B8**. ***Rises:*** Bleached siliceous sand - **H3**, Shallow sandy loam over red-brown clay on calcrete - **B6** and Shallow sand on calcrete - **B8**. ***Swales:*** Deep brown sand - **H2** and Bleached siliceous sand - **H3**.
MBB	36.2	Rise	H3B6B8	V	
		Swale	H2H3	L	
MCA	24.6	Plain	B6B3B8	D	Plains with shallow sand, mostly over red clay, on calcreted calcarenite; but often shallow bleached sand on calcrete; 10-30% bare calcrete.

					Main soils: Shallow sandy loam over red-brown clay on calcrete - **B6**, Shallow sandy loam on calcrete - **B3** and Shallow sand on calcrete - **B8**.
MEB	3.4	Rise	B6B3	V	Gently sloping calcarenite rises with shallow sandy loam; mostly over red clay, on calcrete; 10-30% deep siliceous sand. 20-30% plains with shallow sandy loam, over red clay or poorly structured yellow-brown clay on calcrete. Main soils: ***Rises:*** Shallow sandy loam over red-brown clay on calcrete - **B6** and Shallow sandy loam on calcrete - **B3**. ***Plains:*** Shallow sandy loam over red-brown clay on calcrete - **B6** and Sand over friable brown clay on calcrete - **B7**.
		Plain	B6B7	C	
MFB	3.9	Gently undulating plain	RRB3B6	D	Gently undulating plains with bare calcreted calcarenite outcrop, or shallow sandy loam, often over red clay on calcrete; occasionally bleached siliceous sand on calcrete. Main soils: Rock or exposed calcrete – **RR**, Shallow sandy loam on calcrete - **B3** and Shallow sandy loam over red-brown clay on calcrete - **B6**.
MJB	3.8	Undulating plain	B8H3	D	**MJB** Gently undulating plains with shallow bleached siliceous sand on calcrete or deep bleached siliceous sand.10-30% shallow sandy loam over red clay on calcarenite. **MJC** Rises with shallow siliceous s sand on calcrete or deep siliceous sand. 10-30% bare rock outcrop. Main soils: ***Undulating plains:*** Shallow sand on calcrete - **B8** and Bleached siliceous sand - **H3**. ***Rises:*** Shallow sandy loam on calcrete - **B3** and Bleached siliceous sand - **H3**.
MJC	4.0	Rise	B3H3	D	
MKB	2.7	Low rise	B8RR	D	Low rises with shallow bleached sandy loam on calcrete or bare rock; 10-30% shallow sandy loam on calcrete. Main soils: Shallow sand on calcrete - **B8** and Rock or exposed calcrete – **RR**.
MRA	7.5	Plain	B8B7	D	**MRA** Plains with shallow, bleached siliceous sand, often over poorly structured brown clay, on calcreted calcarenite; 10-30% very shallow sand or bare calcrete. **MRE** Swales with shallow sand over red clay on calcreted calcarenite. Main soils: ***Plains:*** Shallow sand on calcrete - **B8** and Sand over friable brown clay on calcrete - **B7**. ***Swales:*** Shallow sandy loam over red-brown clay on calcrete - **B6**.
MRE	0.7	Swale	B6	D	
MWA	0.2	Plain	B3B7	D	Plains with shallow sandy loam, often over poorly structured brown clay, on calcrete; 10-30% shallow sandy loam over red clay on calcrete, or deep siliceous sands. Main soils: Shallow sandy loam on calcrete - **B3** and Sand over friable brown clay on calcrete - **B7**.
MXC	4.3	Dune range	B3	D	**MXC** Undulating dune ranges with shallow sandy loam on calcrete; 10-30% with red clay subsoils or bare calcrete. **MXD** Rolling rises with mostly bare calcreted calcarenite outcrop or shallow sandy loam on calcrete. <10% swamps with wet, organic loam or peat soils.
MXD	0.2	Rise	RRB3	D	
		Swamp	N3N1	M	

					Main soils: ***Dune ranges:*** Shallow sandy loam on calcrete - **B3**. ***Rises:*** Rock or exposed calcrete – **RR** and Shallow sandy loam on calcrete - **B3**. ***Swamps:*** Wet clay loam - **N3** and Peaty soil – **N1**.
Xuf	0.2	Swamp	N3	V	Swamps with non-peaty wet dark organic clay loam soils; 10-30% water filled or with shallow dark clay loam over dark clay on calcrete. 20-30% stony plains with shallow, mostly calcareous, grey loam, occasionally over dark grey clay, on calcrete; 10-30% bare calcrete. Main soils: ***Swamps:*** Wet clay loam - **N3**. ***Stony plains:*** Shallow calcareous loam on calcrete - **B2** and Shallow sandy loam on calcrete - **B3**.
		Stony Plain	B2B3	C	
ZD-	0.2	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**.
ZK-	1.3	Swampy flat	N3N2M4	V	Swampy flat with mostly wet non- to moderately-saline clay loam over dark clay soils; 10-30% water-filled or with deep calcareous clay loam on marl. 10-20% dunes with deep calcareous and calcareous siliceous sands. Main soils: ***Swampy flats:*** Wet clay loam - **N3**, Wet saline clay loam - **N2c** and Deep hard gradational sandy loam - **M4**. ***Dunes:*** Shell sand - **H1** and Deep brown sand - **H2**.
		Dune	H1H2	L	
ZT-	1.1	Swamp	N2N3	V	Swamps with highly to moderately saline sandy loam over dark clay. 20-30% dunes with deep calcareous sand. Main soils: ***Swamps:*** Wet clay loam - **N3** and Wet saline clay loam - **N2c**. ***Dunes:*** Shell sand - **H1**.
		Dune	H1	C	

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

D	Dominant in extent (>90% of SLU)	C	Common in extent (20–30% of SLU)
V	Very extensive in extent (60–90% of SLU)	L	Limited in extent (10–20% of SLU)
E	Extensive in extent (30–60% of SLU)	M	Minor in extent (<10% of SLU)

Detailed soil profile descriptions:

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.

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.

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

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 a very thick bleached sand grading to yellow sand continuing below 100 cm.

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

Further information: DEWNR Soil and Land Program