

# NEU Neuarpur Land System

- Area:** 62.7 km<sup>2</sup>
- Annual rainfall:** 540 – 560 mm average
- Geology:** The land system is underlain by Parilla Sand; ferruginous, fine to medium, clayey sandstone. Lake Cadnite is underlain by undifferentiated sediments of lakes and swamps surrounded by Parilla Sand.
- Topography:** The Neuarpur Land System is found to the north of the Kybybolite Land System, the Victorian Border to the east and the Naracoorte Range to the west. The Morambro Creek extends to the west from Lake Cadnite. The soils are underlain by unconsolidated sandy to clayey sediments. There are plains and gently undulating rises with seasonally inundated swamps. Minor surface drains are found to help move the surface runoff water to the Morambro Creek and swamps.
- Elevation:** 90 - 100 m
- Relief:** Less than 5 m
- Soils:**
- Sandy and loamy surface soils*
- G4** Sand over poorly structured clay
- F1** Loam over brown or dark clay
- F2** Sandy loam over poorly structured brown or dark clay
- Heavy soils*
- E3** Grey or brown cracking clay
- M2** Deep friable gradational clay loam
- N3** Wet soil (non to moderately saline)
- Main features:** These soils are generally grey to black clays of considerable depth, with high content of lime, and generally show gilgai or 'crabholes'. They are in many ways similar to rendzinas, but occur on deep clays rather than the marls or limestones of the rendzina. These soils have moderate to high fertility, high waterholding capacity, imperfect to poor drainage and dispersive subsoil clays very close to the surface.



**Soil Landscape Unit summary:** 7 Soil Landscape Units (SLU s) mapped in the Neuarpur Land System:

SLU	% of area	Main features
HeA	0.5	<p>Level to gently undulating plain with 20-30% depressions formed in deep unconsolidated clayey sediments.</p> <p>Main soils: <u>loam over brown or dark clay</u> - <b>F1</b> and <u>sandy loam over poorly structured brown or dark clay</u> - <b>F2</b> with <u>deep friable gradational clay loam</u> - <b>M2</b> in depressions.</p> <p>These soils are deep, have moderate to high fertility and high waterholding capacity. The loamy surfaced soil has a moderate limitation to root growth due to the dispersive subsoil clays and the clay loamy surfaces a slight limitation. The plains drainage is slightly imperfect and the depressions imperfect. The plains have acidic surfaces. The watertable could get within 50-100 cm of the surface in the wetter months in the depressions.</p>
TMA	69.7	<p>Level plain with 0-10% swamps. Greater than 50% of the soils are heavy surface textured soils and greater than 10% are texture contrast soils.</p> <p>Main soils: <u>deep friable gradational clay loam</u> - <b>M2</b>, <u>brown-grey cracking clay</u> - <b>E3</b>, <u>sand over poorly structured clay</u> - <b>G4</b> and <u>wet soil</u> - <b>N3</b>.</p> <p>These soils are deep, have high fertility and waterholding capacity. Drainage is imperfect to poor. There is a slight limitation to root growth in the surface as the soils are hardsetting and a slight to high limitation in the subsoil due to the dispersive subsoil clays. The subsoil is alkaline. The swamps are similar except that drainage is poor, there is a high limitation to root growth due to the dispersive subsoil clays and there is slight surface soil acidity.</p>
TNA TNE	21.5 3.2	<p>Level plain with 0-10% non-saline swamps and associated depressions. Greater than 80% of the soils are heavy surface textured soils.</p> <p><b>TNA</b> Level plain with 0-10% swamps <b>TNE</b> Depression</p> <p>Main soils: <u>deep friable gradational clay loam</u> - <b>M2</b>, <u>wet soil</u> - <b>N3</b>, <u>brown-grey cracking clay</u> - <b>E3</b>, and <u>sand over poorly structured clay</u> - <b>G4</b>.</p> <p>These soils are deep, have high fertility and water holding capacity. Drainage is imperfect to poor. There is a slight limitation to root growth in the surface as the soils are hardsetting and a high to severe limitation in the subsoil due to the dispersive subsoil clays. The swamps and depressions are similar except that drainage is poor and there is slight surface soil acidity and subsoil alkalinity.</p>
XRA	2.5	<p>Reclaimed section of Lake Cadnite.</p> <p>Main soils: <u>brown-grey cracking clay</u> - <b>E3</b> and <u>wet soil</u> - <b>N3</b>.</p> <p>These soils are deep, have high fertility and high waterholding capacity. Drainage is imperfect to poor and there is a high to severe limitation to root growth due to the dispersive subsoil clays. Seasonal inundation expected.</p>
XaK	0.5	<p>Morambro Creek.</p> <p>The soils within the creek system vary.</p> <p>Main soils: <u>wet soil</u> - <b>N3</b>, <u>brown-grey cracking clay</u> - <b>E3</b>, and <u>sand over poorly structured clay</u> - <b>G4</b>.</p> <p>These soils are deep with moderately low fertility, have high waterholding capacity and are poorly to very poorly drained. There is a slight to moderate limitation for root growth due to the dispersive subsoil clays. The Mosquito Creek in some areas is permanently filled. This landscape unit is not for agricultural production.</p>
XI-	2.1	<p>Lake Cadnite.</p> <p>Main soils: <u>brown-grey cracking clay</u> - <b>E3</b> and <u>wet soil</u> - <b>N3</b>.</p> <p>These soils are deep, have high fertility and high waterholding capacity. Drainage is poor and there is a severe limitation to root growth due to the dispersive subsoil clays. The lake is seasonally inundated for up to 3 months. This landscape unit is not suitable for agricultural production.</p>



## Detailed soil profile descriptions

(In alphabetic order)

- E3** Brown or grey cracking clay (Brown-Grey Vertosol)
- F1** Loam over brown or dark clay (Melanic, Hypercalcic, Black/Brown Chromosol)  
Medium thickness dark brown sandy loam over a thin to medium sand layer over a structured brown to black clay grading to a brown mottled clay with limestone segregations at depth.
- G4** Sand over dispersive brown clay (Hypercalcic, Brown Sodosol)  
Thin to medium thickness sand sharply overlying brown and yellow or grey mottled dispersive clay with strong columnar structure, calcareous with depth.
- M2** Deep friable gradational clay loam (Red-Brown-Grey- Black Dermosol)  
Deep well structured red clay loamy soil.
- N3** Wet soil (non to moderately saline) (Calcareous Oxyaquic, Dermosolic Hydrosol)  
Darkened loamy surface overlying pale brown sand over yellowish brown sandy clay on calcrete.

(Grouped on landscape position)

### *Sandy and loamy surface soils*

- G4** Sand over poorly structured clay (Mottled-Mesonatric, Brown Sodosol)  
Thin to medium thickness organically darkened loamy sand surface directly overlying a brown sodic poorly structured mottled clay to depth.
- F1** Loam over brown or dark clay (Calcic, Mottled-Sodic, Brown Chromosol)  
Medium thickness sandy loam to loam over a pale loamy sand horizon directly overlying a brown structured clay grading to a sodic clay and calcareous clay at depth.
- F2** Sandy loam over poorly structured brown or dark clay (Calcic, Mottled-Hypernatric, Brown Sodosol)  
Medium thickness sandy loam to sandy clay loam surface directly overlying a mottled, sodic poorly structured brown clay and grading to a brown calcareous clay at depth.

### *Heavy soils*

- E3** Grey or brown cracking clay (Episodic, Gery Vertosol)  
Very thin grey clayey surface over a sodic poorly structured grey clay with light grey and yellow/brown mottles to depth
- M2** Deep friable gradational clay loam (Mottled-Sodic, Calcic, Red-Brown Dermosol)  
Thin to medium thickness red or brown clay loamy surface grading to brown prismatic structured clay grading to a mottled brown-grey calcareous clay at depth.
- N3** Wet soil (non to moderately saline) (Dermosolic, Oxyaquic Hydrosol)  
Grey-black sodic clayey surfaced soil grading to a sodic calcareous grey clay at depth. The soil is seasonally wet.

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

