ORM Ormerod Plains Land System

Area: 99.1 km^2

Annual rainfall: 550 – 570 mm average

Geology: The land system is formed on calcreted sediments of the Padthaway Formation, which includes clays and limestones or dolomites, deposited in coastal lagoons. Protruding through the Padthaway sediments are scattered calcarenites, probably islands in the old lagoons.

Topography: The Ormerod Plains Land System is a NNW-SSE trending inter-dune corridor that is bordered to the east by ancient coastal dune ranges. The corridor has an imperceptible fall to the west. There is a water table within a metre or two at some time of the year. There are occasional swamps. Low rises are scattered across the plains and these are lunettes from pre-European swamps.

Elevation: 50 m

Relief: Generally nil, but up to 2 m on rises

Soils:

Shallow and/or stony soil

B2 Shallow calcareous loam on calcrete
B3 Shallow sandy loam on calcrete
B4 Shallow red loam on calcrete
B5 Shallow dark clay loam on limestone
B6 Shallow loam over red-brown clay on calcrete

Other soils

G3 Thick sand over clay
H3 Bleached siliceous sand
M2 Deep friable gradational clay loam
N3 Wet soil (non to moderately saline)

Main features: The Ormerod Plains Land System is predominantly a plain with minor rises. The plains are reasonably to imperfectly drained and the swamps poorly drained. Soils typically have clay loamy/clayey surfaces and calcrete within 50 cm of the surface. Fertility is moderately low to high. The main limitations to productivity are waterlogging and rockiness in some areas. The rises are predominantly stony and loamy with moderately low to high fertility. Rockiness may be a limitation to productivity.

Soil Landscape Unit summary: 7 Soil Landscape Units (SLUs) mapped in the Ormerod Plains Land System:

SLU	% of area	Main features #
M-A	0.2	Gently sloping undulating plain to small rise formed on calcreted calcarenites of ancient coastal dunes, partially overlain by Molineaux Sands. There is greater than 50% calcrete outcrop exposed with greater than 10% shallow soil. Main soils: shallow red loam on limestone - **B4** (C), shallow calcareous loam on calcrete - **B2** (L), shallow loam over red-brown clay on calcrete - **B6** (L), shallow sandy loam on calcrete - **B3** (L), thick sand over clay - **G3** (L) and bleached siliceous sand - **H3** (M). The stony soils are semi-arable, are very shallow, have moderately low fertility, low waterholding capacity and are well drained. There is up to 50% exposed rock. The loamy rise soils are shallow, have high fertility, moderately low waterholding capacity and are well drained. The minor sandy soils are moderately deep with low fertility, moderate waterholding capacity and rapid drainage. Water repellence and wind erosion are limitations.
NNa	2.0	Flat plains with 10-15% swamps with noticeable salinity. Main soils: shallow dark clay loam on limestone - **B5** (E), deep friable gradational clay loam – **M2** (E), shallow calcareous loam on calcrete - **B2** (L) and wet soil - **N3** (M). The soils are moderately deep, have high fertility, moderate to high waterholding capacity and is imperfectly (plain) to poorly drained (swamps). There are no land use limitations except for watertables, which are within a metre or two of the surface seasonally.
NxB NxC NxN NxU	2.5 13.6 65.65 15.7	Flat plains that are formed on calcreted sediments of the Padthaway Formation. There is a mixture of plains with and without surface stone, up to 40 % stony rises and up to 25% swamps. **NxB** Stony plains with 0-10% swamps **NxC** Plains with 0-10% swamps and 0-10% stony rises **NxN** Stony plains with 10-50% stony rises and 0-10% swamps **NxU** Plains with 10-50% swamps and 10-50% stony rises Main soils: shallow calcareous loam on calcrete - **B2** (V), shallow dark clay loam on limestone - **B5** (E) and wet soil - **N3** (M). These soils are shallow, have high fertility and moderately low water holding capacity. Drainage is imperfect and the soil is alkaline and calcareous throughout. The watertable is within a metre or two of the surface at some time during the year and there is the potential for flooding. The stony plains and stony rises provide a slight management problem for cultivation.
Xc-A	0.35	Low lunettes that are found on the flat plains where old swamps may have existed. Main soils: shallow calcareous loam on calcrete - **B2** (V), shallow red loam on limestone - **B4** (C) and shallow loam over red-brown clay on calcrete - **B6** (E). These soils are shallow, have moderate to high fertility, low waterholding capacity and are well drained. The land is semi-arable as there is up to 50% exposed rock. The soils are alkaline below the topsoil due to the presence of carbonates.

PROPORTION codes assigned to soils within Soil Landscape Units (SLU):

(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:

(In alphabetic order)

B2 Shallow calcareous loam on calcrete (Hypocalcic, Petrocalcic Grey/Black Calcarosol)
Thin to medium thickness calcareous clay loam becoming more calcareous, more clayey and greyer with depth, overlying calcreted lagoonal sediments at less than 50 cm.

B4 Red loam over calcrete (Petrocalcic, Red Dermosol)
Medium thickness red loam grading to friable red clay loam over calcreted calcarenite within 50 cm.

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 loam over red-brown clay on calcrete (Petrocalcic, Red Chromosol)
Thin to medium thickness sandy loam overlying red or brownish friable clay on calcreted calcarenite within 50 cm.

G3 Thick sand over clay (Mesotrophic, Mesonatric, Brown Chromosol/Sodosol)
Thick to very thick sand with a pale sand layer directly overlying a brownish friable clay

M2 Deep friable gradational clay loam (Red-Brown-Grey- Black Dermosol)
Deep well structured red clay loamy soil.

(Grouped on landscape position)

Shallow and/or stony soil

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Medium thickness red loam grading to friable red clay loam over calcreted calcarenite within 50 cm.

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Black clay loam to light clay over calcreted limestone at shallow depth, grading to highly calcareous clay - flats.

B6 Shallow loam over red-brown clay on calcrete (Petrocalcic, Red Chromosol)
Thin to medium thickness sandy loam overlying red or brownish friable clay on calcreted calcarenite within 50 cm.

Other soils

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 a pale brown sand overlying a yellowish brown sandy clay on calcrete.

G3 Thick sand over clay (Mesotrophic, Mesonatric, Brown Chromosol/Sodosol)
Thick to very thick sand with a pale sand layer directly overlying a brownish friable clay

H3 Bleached siliceous sand (Arenic, Bleached-Orthic Tenosol)
Thick to very thick bleached sand, organically darkened at the surface over yellow sand continuing below 100 cm.

Further information: DEWNR Soil and Land Program