

EWE East Wellington Land System

Gently undulating sandy and stony flats between Wellington and Cooke Plains

Area: 78.8 km²

Annual rainfall: 360 – 385 mm average

Geology: The land is underlain by calcreted Bungunnia Limestone, a consolidated carbonate rich sediment deposited in an ancient lake. Remnants of older coastal ridges projected above lake level and persist today as isolated rises of Bridgewater calcarenite. The flats and rises have both been calcreted in more recent times, so that a more or less continuous layer of sheet or boulder calccrete blankets the landscape. Extensive deposits of Molineaux Sand overlie the calccrete.

Topography: The landscape is a gently undulating plain of calcreted Bungunnia Limestone on the flats and calcreted Bridgewater Formation on the rises. Superimposed on both rises and flats are moderate jumbled sandhills, many of which have eroded severely in the past and some of which are still actively drifting

Elevation: 10 - 20 m

Relief: Up to 10 m

Soils: The soils are either sandy with thick to very thick surfaces, or are shallow over calcreted sediments.

Main soils

B2 Shallow calcareous sandy loam

H2 Deep sand

G2 Sand over sandy clay loam

Main features: The East Wellington Land System is a gently undulating complex of stony flats and rises and extensively eroded jumbled sandhills. The stony land is semi arable, as a significant proportion of soils is too shallow for productive cropping. Areas of deeper soils are arable, but water holding capacity and low fertility are limiting. The sandhills are highly infertile, especially so because of past erosion, and are prone to water repellence. Potential for wind erosion is high.



Soil Landscape Unit summary: 4 Soil Landscape Units (SLUs) mapped in the East Wellington Land System:

SLU	% of area	Main features #
MyB	31.8	<p>Rises less than 10 m high formed on calcreted Bridgewater Formation calcarenites. There is variable surface calcrete stone, often extensive and with sheet rock at the surface. Low sandhills cover up to 30% of the land surface.</p> <p>Main soils: <u>shallow calcareous sandy loam</u> - B2 (V), with <u>deep sand</u> - H2 (L) and <u>sand over sandy clay loam</u> - G2 (L) on sandhills. These rises have moderately shallow to shallow calcareous sandy loams which are generally arable, but productivity is invariably limited by one or more of insufficient water holding capacity, low fertility or stoniness. Limited sandhills have deeper soils but very low fertility and susceptibility to water repellence and wind erosion limits their usefulness.</p>
NbA NgA	17.4 17.5	<p>Stony flats with up to 30% low sandhills.</p> <p>NbA Flats with less than 10% sandhills. NgA Flats with 10-30% sandhills.</p> <p>Main soils: <u>shallow calcareous sandy loam</u> - B2 (D-V) on flats, and <u>deep sand</u> - H2 (M-L) and <u>sand over sandy clay loam</u> - G2 (M-L) on sandhills. The flats have moderately shallow to shallow calcareous sandy loams which are semi arable due to extensive stoniness, shallow profiles and marginal fertility. The sandhills have deeper soils but very low fertility and susceptibility to water repellence and wind erosion limits their usefulness.</p>
UUF	33.3	<p>Jumbled sand hills with limited flats. The sandhills are commonly eroded.</p> <p>Main soils: <u>deep sand</u> - H2 (E) and <u>sand over sandy clay loam</u> - G2 (E) on sandhills, and <u>shallow calcareous sandy loam</u> - B2 (C) on flats. The sands are very infertile and usually water repellent. They are highly susceptible to wind erosion; many sandhills have eroded badly in the past, and some are still actively drifting. Productive potential is low.</p>

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

(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 (Petrocalcic, Supracalcic Calcarosol)
Thin calcareous sandy loam grading to a rubbly calcareous light sandy clay loam overlying calcreted limestone or calcarenite at depths of between 15 and 50 cm.
- G2** Sand over sandy clay loam (Calcic, Red Chromosol)
Very thick loose grey brown sand, with a bleached A2 layer abruptly overlying a reddish yellow light sandy clay loam, calcareous from about 85 cm, becoming sandier with depth over limestone.
- H2** Deep sand (Calcareous, Arenic / Regolithic, Brown-Orthic Tenosol)
Very thick loose brownish sand becoming paler coloured with depth and continuing below 100 cm. Brownish clayey sand to light sandy clay loam with nodular carbonate occurs at variable depths below 100 cm.

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

