

# EVE Everard Land System

Saline plains extending north from Everard Central

**Area:** 70.9 km<sup>2</sup>

**Annual rainfall** 360 – 375 mm average

**Geology:** Old lake floor sediments, typically clayey in texture and with abundant crystalline gypsum beds. The sediments are capped in places by calcretes. Soft windblown gypsum deposits are scattered across the surface of the land system.

**Topography:** The land system is a flat saline lacustrine plain, lying between Black Point Hill Range to the west and the gently sloping outwash fans of the Clare Hills to the east. The plain is the discharge area for Magpie Creek to the north, but because there is a fall of only 25 m in 20 km down the length of the Land System, there is no defined drainage pattern. Ground water, supplemented by any flood waters from Magpie Creek, is close to the surface and highly saline. Salt lakes have apparently been a characteristic feature of the landscape in the past. These are now highly saline flats. Halophytic vegetation, notably samphire, is characteristic of much of the flats. Interspersed across the plains are low gypsum rises, formed by wind action from the reworking of crystalline gypsum deposits from the old salt lakes.

**Elevation:** 90 m at the northern end, where Magpie Creek enters the system, to a low of 65 m in the south.

**Relief:** Maximum relief is 10 m (gypsum rise)

**Soils:** The soils are loamy and calcareous, dominated by either gypsum or sodium salts associated with shallow saline water tables and old lake floor deposits.

#### Main soils

**A6** Calcareous clay loam - extensive (throughout)

**N2** Saline swamp soil - common (saline flats)

**A5** Rubbly calcareous loam - common (calcreted flats)

**A8** Gypseous calcareous loam - limited (lunettes)

#### Minor soils

**C3** Gradational clay - flats

**Main features:** The Everard Land System is characterized by extensive saline flats with vegetation communities reflecting varying levels of salinity. There is little surface salt leaching due to the low rainfall, so at best the flats are semi arable. Bare or samphire flats have little agricultural value. There are significant areas of gypseous lunettes scattered across the landscape; some are commercially quarried.



**Soil Landscape Unit summary:** 5 Soil Landscape Units (SLUs) are mapped in the Everard Land System:

SLU	% of area	Main features #
VAD	37.3	Samphire and saltbush flats formed on old lake floor sediments (gypseous clays). Main soils: <u>saline swamp soil - N2</u> (E) with <u>calcareous clay loam - A6</u> (E). The flats are highly saline and wet for extended periods. They are only suitable for light grazing due to the low productivity and fragility of the vegetation. As well as being wet and saline, all soils are highly alkaline and have very high levels of sodium and boron near the surface.
VHB VHC VHF	35.3 9.3 0.8	Flats formed on old gypseous lake floor sediments, and capped by hard calcrete. <b>VHB</b> Marginally saline (semi arable) flats. <b>VHC</b> Highly saline (nitre bush, saltbush and samphire) flats. <b>VHF</b> Complex of marginally 60% saline flats, 25% salt lakes and 15% lunettes. Main soils in <b>VHB</b> and <b>VHC</b> : <u>rubbly calcareous loam - A5</u> (E) and <u>calcareous clay loam - A6</u> (E) with <u>gradational clay loam - C3</u> (L). These soils occupy 60% of <b>VHF</b> , which also includes <u>saline swamp soil - N2</u> (C) in the salt lakes and <u>gypseous calcareous loam - A8</u> (L) on the lunettes. Apart from the low rainfall, this land has limited agricultural potential due to moderate to high salinity and associated problems of boron toxicity and waterlogging. A further limitation is low water holding capacity caused by the predominantly stony soils.
ZL-	17.3	Gypsum lunettes with mainly <u>gypseous calcareous loam - A8</u> (V) and <u>calcareous clay loam - A6</u> (C). Agricultural productivity is limited not only by low rainfall and low fertility, but by the position of the lunettes in relation to the surrounding country - ie they are islands in a sea of non arable land.

# 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:

- A5** Rubbly calcareous loam (Gypsic, Supracalcic / Lithocalcic Calcarosol)  
Calcareous loam to clay loam over a Class III B or III C rubble layer at shallow depth, grading to gypseous clay from about 80 cm.
- A6** Calcareous clay loam (Gypsic, Hypercalcic Calcarosol)  
Calcareous clay loam grading to a very highly calcareous clayey subsoil (Class I carbonate) overlying gypseous clay from about 70 cm.
- A8** Gypseous calcareous loam (Hypergypsic Calcarosol)  
Very highly calcareous loam to clay loam grading to soft gypsum beds at about 50 cm.
- C3** Gradational clay loam (Gypsic, Hypercalcic, Red Dermosol)  
Medium thickness clay loam grading to a well structured red clay with a soft Class I carbonate layer from about 40 cm over gypseous clay from about 65 cm.
- N2** Saline swamp soil (Gypsic, Hypersalic Hydrosol)  
Clay loam grading to red or grey clay, slightly calcareous throughout and with variable soft and crystalline gypsum. Soil is wet for most of the time.

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

