

STN Stone Ridge Land System

Gently undulating plains south east of Cambrai

Area: 93.3 km²

Annual rainfall: 250 – 325 mm average

Geology: The land is underlain by sheet and rubbly calcrete. The calcrete is probably underlain by Blanchetown Clay although there was no field confirmation. The land surface is partly overlain by deposits of Molineaux Sand.

Topography: The land system is a very gently undulating plain with extensive surface calcrete. Stone heaps are a feature of the landscape. There is a broad low rise in the west, and occasional isolated depressions within the calcrete cap over the rest of the landscape. Low linear east-west sandhills occur sporadically over the main landscape.

Elevation: 60 - 108 m

Relief: Less than 10 m

Soils: Shallow sandy loams over calcrete predominate

Main soils

Stony flats and rises

B2/B3 Shallow stony sandy loam

Minor soils

Rises and flats

A4a Rubbly calcareous loamy sand

A4b Calcareous sandy loam

D2 Loamy sand over red sandy clay

Sand hills and spreads

H2 Deep sand

G1 Sand over red sandy clay loam

Main features: The Stone Ridge Land System is dominated by very gently undulating flats and rises with shallow stony sandy loams over calcrete. This land is partly arable, considerable areas being too stony or soils too shallow for economic cropping. Other features, occupying limited areas, are broad low rises with deeper, fully arable calcareous loamy sands and sandhills, isolated depressions with moderately deep and moderately fertile soils (mixed calcareous sandy loams and texture contrast soils), and low sandhills with infertile soils prone to wind erosion and water repellence.



Soil Landscape Unit summary: 4 Soil Landscape Units (SLUs) mapped in the Stone Ridge Land System

SLU	% of area	Main features #
QMA	84.6	Gently undulating low rises and flats formed on calcrete. There is variable surface stone and shallow sheet rock - the land is semi arable. Main soil is <u>shallow stony sandy loam</u> - B2/B3 (D). Where arable, the soils are shallow and stony with limited waterholding capacity and marginal fertility.
SUB	8.7	Gently undulating rises formed on rubbly or soft carbonate overlain by irregular sandhills and spreads. Main soils are <u>rubbly calcareous loamy sand</u> - A4a (C) and <u>shallow stony sandy loam</u> - B2/B3 (C) on rises with variable calcrete stone, with <u>deep sand</u> - H2 (L) and <u>sand over red sandy clay loam</u> - G1 (L) on sandy areas. <u>Calcareous sandy loam</u> - A4b and <u>loamy sand over red sandy clay</u> - D2 are minor soils. This land is mostly arable, although restricted waterholding capacity, rockiness, low fertility and wind erosion potential are moderate to high limitations to productivity depending on the soil type.
SWE	3.3	Depressions underlain by either sheet calcrete or highly calcareous medium textured materials. Main soils: <u>calcareous sandy loam</u> - A4b (E), <u>loamy sand over red sandy clay</u> - D2 (E) and <u>shallow stony sandy loam</u> - B2/B3 (E). The A4b and D2 soils are moderately deep and relatively fertile. Limitations to productivity are slight. The shallower B2/B3 soils however have restricted waterholding capacity and marginal fertility.
U-D	3.4	Low parallel sand ridges overlying the gently undulating low rises and flats of QMA . Main soils are <u>deep sand</u> - H2 (E) and <u>sand over red sandy clay loam</u> - G1 (E). These sandy soils are infertile and prone to wind erosion. Water repellence may be a problem in some seasons. Productive potential is low, especially in combination with the stony flats.

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

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|--|---------------------------------------|
| (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:*Stony flats and rises***B2/B3** Shallow stony sandy loam (Petrocalcic Calcarosol / Rudosol)

Medium thickness loamy sand to sandy loam (calcareous in 50% of profiles), with variable carbonate rubble over calcrete at 25 cm.

*Rises and flats***A4a** Rubbly calcareous loamy sand (Regolithic, Supracalcic / Lithocalcic Calcarosol)

Calcareous loamy sand to sandy loam, slightly more clayey with depth over rubbly Class III B or III C carbonate from about 20 cm. Rubble content decreases with depth.

A4b Calcareous sandy loam (Regolithic, Hypercalcic Calcarosol)

Calcareous sandy loam grading to a highly calcareous sandy clay loam to light clay continuing below 100 cm.

D2 Loamy sand over red sandy clay (Calcic, Red Chromosol)

Thick loamy sand to sandy loam over a red massive sandy light clay, calcareous from about 60 cm and grading to medium grained sediments.

*Sand hills and spreads***H2** Deep sand (Arenic Rudosol)

Very thick loose red or brown sand of variable depth (depending on erosional history) over calcrete.

G1 Sand over red sandy clay loam (Petrocalcic, Red Chromosol)

Thick to very thick loose sand over a red sandy clay loam with variable carbonate over calcrete within 100 cm.

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

