

BWH Black and White Hill Land System

Low rounded hill north of Sedan

- Area:** 28.8 km²
- Annual rainfall:** 285 – 330 mm average
- Geology:** The hill is formed on an intrusion of Palmer Granite. The granite is at or near the surface over about half of the area. Elsewhere it is capped by a veneer of Woorinen Formation carbonates with variable rubble content, or hard calcrete. There are minor drift sand deposits.
- Topography:** The Land System is a single low hill up to 60 m high with slopes of 8% in places, grading to 2 - 3% on lower slopes. There is up to 20% granite outcrop on some upper slopes and areas of sheet calcrete on the western side. These areas have extensive surface stone.
- Elevation:** 80 - 158 m (Black and White Hill)
- Relief:** 60 m
- Soils:** Most soils are shallow to moderately deep sandy loams, generally calcareous throughout. Weathering granite underlies many of the soils. There are minor deep sands.

Main soils

- B2** Shallow calcareous sandy loam on calcrete
A4 Calcareous sandy loam on Woorinen Formation carbonates
A2 Rubbly calcareous loamy sand on granite

Minor soils

- C2** Gradational sandy loam on granite
H2 Deep sand formed on Recent drift

- Main features:** The Black and White Hill Land System is a stony low hill dominated by shallow to moderately deep calcareous loamy sands to sandy loams. Areas of outcropping granite and sheet calcrete are non arable, and their shallow soils have low productive potential. A significant area has deeper calcareous sandy loams which are fully arable. Moderately low fertility and a proportion of moderately shallow soils are the main limitations to crop productivity.



Soil Landscape Unit summary: 3 Soil Landscape Units (SLUs) mapped in Black and White Hill Land System:

SLU	% of area	Main features #
ETC	32.2	Moderate slopes on granite within a metre of the surface. There is about 20% outcropping rock, calcreted in places. There is up to 20% surface calcrete and granite. Main soils: <u>rubbly calcareous sandy loam - A2 (V)</u> with <u>shallow calcareous sandy loam - B2 (L)</u> on calcrete and <u>gradational sandy loam - C2 (L)</u> . Frequent rocky outcrops on these slopes effectively prevent cropping. Water holding capacity is also limiting, especially in soils with high rubble contents.
QMB	15.8	Calcreted slopes underlain by granite. There is extensive sheet rock at or near the surface, and surface stone. Main soil: <u>shallow calcareous sandy loam - B2 (D)</u> . This land is too stony and the soils too shallow for cultivated agriculture.
SPC	52.0	Gentle slopes formed on Woorinen Formation carbonates capping weathering granite. There are limited areas of shallow calcrete and 10-20% surface calcrete. Main soils: <u>calcareous sandy loam - A4 (E)</u> , with <u>shallow calcareous sandy loam - B2 (L)</u> , <u>rubbly calcareous sandy loam - A2 (L)</u> and <u>deep sand - H2 (M)</u> on sand drifts. This is the most favourable land in the system, with deeper soils and little rock. Moderately low natural fertility and restricted water holding capacity in shallower soils are the main limitations.

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:

Soils formed on granite

A2 Rubbly calcareous loamy sand (Lithic, Supracalcic / Lithocalcic Calcarosol)

Thin calcareous loamy sand grading to a highly calcareous sandy loam with minor calcrete nodules and granite fragments over a Class III B or III C carbonate rubble layer at about 20 cm, grading to weathering granite at about 65 cm.

C2 Gradational sandy loam (Calcic, Red Kandosol)

Medium thickness sandy loam grading to a red sandy clay loam over a calcareous light clay from 60 cm grading to weathering granite within 100 cm.

Soils formed on Woorinen Formation carbonates

A4 Calcareous sandy loam (Hypercalcic Calcarosol)

Calcareous sandy loam becoming more calcareous and more clayey at depth with limited carbonate rubble in a sandy clay loam matrix continuing below 100 cm.

Soils formed on calcrete

B2 Shallow calcareous sandy loam (Petrocalcic Calcarosol)

Calcareous sandy loam with variable rubble over sheet calcrete at depths between 20 and 40 cm.

Soils formed on drift sand

H2 Deep sand (Arenic Rudosol)

More than 100 cm loose sand.

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

