

MUT Murtho Land System

(Based on the description by Potter, Wetherby and Chittleborough (1973) in "A Description of the Land in County Albert, County Alfred and Part of County Eyre, South Australia". Dept. of Agric. S.A. Soil Cons. Branch LD1).

Gently undulating flats with low sand hills north east of Paringa

Area: 112.4 km²

Annual rainfall: 255 – 270 mm average

Geology: The land is underlain by Tertiary sediments, either Parilla Sand or Blanchetown Clay, which are exposed near the surface on flats. The sediments are partially capped by rubbly calcrete overlain by extensive deposits of very highly calcareous medium grained calcareous material, often in rubbly form (Woorinen Formation). Deposits of windblown Molineaux Sand are superimposed over this material.

Topography: The landscape is gently undulating. Lower lying flats where the calcrete is not present, alternate with gentle rises formed on Woorinen sediments. Overlying the rises are dunefields of low rounded east - west sandhills.

Elevation: 60 - 75 m

Relief: 6 - 9 m

Soils: Most soils are calcareous or non-calcareous sandy loams, with deep sands on sandhills.

Main soils

Rises

A4 Rubbly calcareous sandy loam

Flats

D5 Sandy loam over clay

Sandhills

H2 Deep sand

Main features: The Murtho Land System is a gently undulating plain in the extreme north east of the Murray Mallee. Low rainfall is the main determinant of land use, with the heavier (sandy loam) flats often not cropped. These soils are commonly marginally saline. The lighter soils (loamy sands) of the rises are more productive. The sandhills are too infertile and prone to wind erosion for significant cropping. Near the River Murray this land is irrigated, but salinity and drainage problems have developed.



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

SLU	% of area	Main features #
HkA HqA	6.7 21.4	Very gently undulating flats formed over Tertiary sediments, partly capped by Woorinen Formation materials. HkA Flats with less than 10% low rises and areas of marginally saline soils. HqA Flats with 10-30% low rises. Main soils: <u>sandy loam over clay</u> - D5 (V) on flats and <u>rubbly calcareous sandy loam</u> - A4 (M-C) on rises. Low rainfall limits the dryland use of this land mostly to grazing. The soils are slightly to moderately saline, although relatively deep and moderately fertile. The sandier rises are potentially more productive due to lower salinity and greater water availability in the dry conditions. Near the river these soils are irrigated but salinity and drainage problems have developed.
SQB	51.4	Rises up to 6 m high formed on soft to rubbly Woorinen Formation carbonates. Main soils: <u>rubbly calcareous sandy loam</u> - A4 (V) with <u>deep sand</u> - H2 (L) on sandier areas. These rises are marginally arable, mainly due to the low rainfall. Soil depth is moderate, fertility moderately low and soil salinity levels may be moderate. The land is potentially the most productive in the System. Where irrigated near the river, some salinity has developed.
UIJ	20.5	Gently undulating land with 30-60% low east - west sandhills up to 6 m high and gently undulating flats and swales 200 - 400 m wide. Main soils: <u>deep sand</u> - H2 (E) on sandhills, <u>rubbly calcareous sandy loam</u> - A4 (E) on rises and <u>sandy loam over clay</u> - D5 (C) on flats. Much of this land is not developed due to the low fertility of the sands and their susceptibility to wind erosion.

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:

- A4** Rubbly calcareous sandy loam (Regolithic, Supracalcic Calcarosol)
Calcareous loamy sand to sandy loam becoming more clayey and calcareous with depth over Class III B carbonate rubble from about 35 cm, grading to Woorinen Formation deposits.
- D5** Sandy loam over clay (Hypercalcic, Red Sodosol)
Medium thickness sandy loam with a bleached sandy A2 layer over a red light clay with soft carbonate from about 30 cm grading to Tertiary sediments with depth.
- H2** Deep sand (Regolithic, Calcic Calcarosol)
Very thick slightly to moderately calcareous sand to loamy sand grading to a highly calcareous sandy loam to sandy clay loam a depths ranging from 40 cm to 150 cm.

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

