

NOO Noora 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).

Low lying flats adjacent to the Victorian border from Taplan to Yamba

Area: 136.4 km²

Annual rainfall: 260 – 265 mm average

Geology: The main part of the area is underlain by gypseous clays of the Yamba Formation, with Parilla Sand at depth. Gypsum, reworked from these deposits has accumulated in low rises and lunettes overlying the clays. Around the fringes of the area are deposits of Woorinen Formation carbonates and Molineaux Sand.

Topography: The System is a low lying basin, comprising extensive flats sporadically overlain by hummocky rises or lunettes of gypsum (copi). Around the edges of the basin and between isolated flats are rises and sandhills similar to those of the adjacent Loxton Land System. There is a highly saline water table at between one and two metres.

Elevation: 25 - 30 m

Relief: 3 - 6 m

Soils: The predominant soils are saline sandy loams with more clayey subsoils. Gypseous soils characterize the limited areas of lunettes. Minor soils include calcareous loamy sands and deep sands.

Main soils

Saline flats

N2 Saline sandy loam over sandy clay

"Copi" (gypsum) hillocks

A8 Gypseous soil

Minor soils

Marginally to non saline flats

A4/C1 Calcareous / gradational loamy sand

Rises

A4 Rubbly calcareous loamy sand

Sandhills

H2 Deep slightly calcareous sand

Main features: The Noora Basin is a natural saline discharge area characterized by highly saline flats with perennial shrub cover which must be protected from overgrazing. The scattered "copi" hills have some value as sources of agricultural gypsum. Rises and sandhills around the edges of the System are similar to the adjacent Loxton Land System.



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

| SLU | % of area | Main features # |
|-----|-----------|---|
| SDP | 3.3 | Marginally saline flats. Main soils: <u>calcareous / gradational loamy sand</u> - A4/C1 (E) and <u>rubbly calcareous loamy sand</u> - A4 (E). The soils are moderately deep - depth to highly calcareous layers determines effective rootzone. They are alkaline and moderately saline. Cropping potential is low. |
| SkL | 5.2 | Gently undulating rises formed on rubbly Woorinen Formation carbonates, with 10-30% low sandhills and minor saline depressions. Main soils: <u>rubbly calcareous loamy sand</u> - A4 (V) with <u>deep slightly calcareous sand</u> - H2 (C) on sand spreads and dunes. The rubbly A4 soils have variable productive potential depending on depth to and strength of the calcrete. The soils are alkaline and mildly saline, moderately so at depth. Up to 10% of the land is affected by saline watertables. The sandy soils (H2) are deep but infertile and highly susceptible to wind erosion. |
| UMJ | 2.6 | Low linear sand ridges superimposed on stony rises. Ridges occupy 30-60% of the land surface. Main soils: <u>deep slightly calcareous sand</u> - H2 (E) on sandhills, with <u>rubbly calcareous loamy sand</u> - A4 (E) on intervening flats and slopes. The sands are deep but infertile and highly susceptible to wind erosion when exposed. The flats are potentially more productive but restricted waterholding capacity limits yields. |
| ZJ- | 89.0 | Complex of saline flats and low gypsum rises (locally "copi hills") in a ratio of about 80:20. Main soils: <u>saline sandy loam over sandy clay</u> - N2 (V) on flats, with <u>gypseous soil</u> - A8 (C) on copi hills. The flats have no cropping potential. They can be used for opportunistic grazing of native shrubs (saltbush and samphire) and ephemeral grasses. Uncontrolled grazing must be avoided as these plants take a long time to recover from overgrazing. The copi hills are highly susceptible to wind erosion when bared off. |

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:*Saline flats***N2** Saline sandy loam over sandy clay (Sodosolic, Hypersalic Hydrosol)

Thin fine sandy loam with a sandier A2 layer abruptly overlying a brown or grey sandy clay loam to sandy clay, calcareous with depth grading to a non-calcareous light brown mottled heavy clay with a highly saline water table at 50 - 150 cm, but may be shallower. Selenite crystals occur throughout.

*"Copi" (gypsum) hillocks***A8** Gypseous soil (Gypsic Rudosol / Hypergypsic Calcarosol)

More than 100 cm of seed and flour gypsum, with weak carbonate accumulations.

*Marginally to non saline flats***A4/C1** Calcareous / gradational loamy sand (Epibasic, Regolith, Calcic / Lithocalcic Calcarosol)

Medium thickness sand to sandy loam grading to a friable red sandy clay loam over soft to rubbly carbonate at depths ranging from 45 to 75 cm. This grades to highly calcareous sandy clay loam with depth.



Rises

- A4** Rubbly calcareous loamy sand (Regolithic, Supracalcic / Lithocalcic Calcarosol)
Medium thickness calcareous sand to sandy loam, grading to a highly calcareous sandy clay loam overlying rubbly Class III B or III C carbonate at depths ranging from 25 to 70 cm.

Sandhills

- H2** Deep slightly calcareous sand (Regolithic, Hypocalcic Calcarosol)
Very thick reddish slightly calcareous sand, with segregations of soft carbonate at variable depth depending on erosional history. Usually sandy for several metres.

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

