CALCAREOUS GRADATIONAL LOAM

(Nundroo soil)

General Description: *Calcareous loam grading to a very highly calcareous light clay over calcrete at moderate depth*

Landform: Very gently undulating plain.

Substrate: Sheet calcrete (Ripon Calcrete)

Vegetation: Samphire / saltbush

Type Site:

Site No.:	EF022	1:50,000 mapsheet:	5334-2 (Coorabie)
Hundred:	Caldwell	Easting:	255300
Section:	43	Northing:	6483850
Sampling date:	23/01/1992	Annual rainfall:	290 mm average

Flat with a crusting surface and no stones.

Soil Description:

Depth (cm)	*Description*
0-8	Yellowish red firm highly calcareous loam with moderate subangular blocky structure. Clear to:
8-14	Yellowish red friable very highly calcareous clay loam with moderate subangular blocky structure. Clear to:
14-35	Reddish yellow firm massive very highly calcareous sandy clay loam. Clear to:
35-75	Yellowish red very highly calcareous light clay with moderate subangular blocky structure. Sharp to:
75-	Sheet calcrete.

Classification: Epihypersodic, Petrocalcic, Hypercalcic Calcarosol; thin, non-gravelly, loamy / clayey, moderate

Summary of Properties

Drainage: Moderately well drained. The soil never remains wet for more than a week following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderate, as indicated by the exchangeable cation data. Nutrient retention capacity is high, but very high carbonate levels tend to tie up phosphorus and some trace elements. Phosphorus, zinc and copper concentrations are marginal. Organic matter levels are satisfactory.

pH: Alkaline throughout.

Rooting depth: 14 cm in pit.

Barriers to root growth:

Physical: The calcrete prevents deep root growth.

Chemical: High salinity, sodicity and boron levels from shallow depth restrict root growth.

Waterholding capacity: 80 mm above the calcrete, but only about 20 mm is available to agricultural plants due to restricted rootzone.

Seedling emergence: Fair to good, depending on the degree of crusting of the surface.

Workability: Usually satisfactory, unless surface soil has set down hard.

Erosion Potential:

Water: Low.

Wind: Moderately low.

Laboratory Data

Depth cm	pH H_2O	pH $CaCl_2$	CO_3 %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO_4 mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-8	8.6	8.0	6	2.0	21.8	1.3	16	1600	-	14.9	0.22	2.9	8.8	0.47	19.7	8.6	3.4	6.37	5.73	32
8-14	8.5	8.1	26	6.9	58.9	1.2	18	1800	-	25.8	0.31	2.4	6.0	0.17	22.0	7.0	3.5	10.83	6.03	49
14-35	8.7	8.0	66	4.7	38.4	0.6	6	490	-	36.1	0.34	1.2	0.80	0.17	9.9	4.2	3.2	5.61	1.62	57
35-75	8.3	8.0	50	5.9	52.6	-	-	-	-	18.0	0.30	3.6	0.65	0.08	18.5	4.9	4.3	9.21	3.14	50

Note: CEC (cation exchange capacity) is a measure of the soil's capacity to store and release major nutrient elements. ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the CEC

Further information: DEWNR Soil and Land Program