

DEEP CALCAREOUS SHELL SAND

(Haslam soil)

General Description: *Very thick very highly calcareous sand with variable carbonate rubble*

Landform: Undulating rises with low sandhills.

Substrate: Windblown sand dominated by crushed shells.

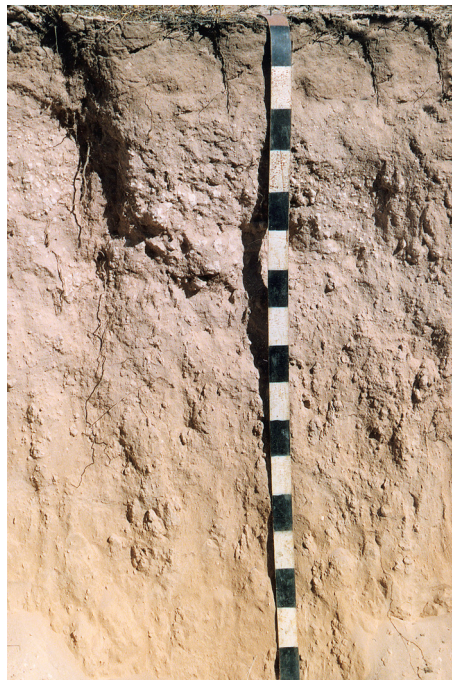
Vegetation:

| | | | | |
|-------------------|----------------|------------|--------------------|------------------|
| Type Site: | Site No.: | EW074 | 1:50,000 mapsheet: | 5732-1 (Courela) |
| | Hundred: | Finlayson | Easting: | 434650 |
| | Section: | 35 | Northing: | 6396140 |
| | Sampling date: | 29/03/1993 | Annual rainfall: | 330 mm average |

Midslope of an undulating rise, 3% slope. Loose surface with no stones.

Soil Description:

| <i>Depth (cm)</i> | <i>Description</i> |
|-------------------|--|
| 0-11 | Brown soft very highly calcareous loamy sand. Clear to: |
| 11-33 | Brown soft very highly calcareous loamy sand with 10-20% carbonate concretions (2-6 mm). Diffuse to: |
| 33-66 | Light brown soft very highly calcareous sand with 20-50% carbonate concretions (20-60 mm). Diffuse to: |
| 66-100 | Light brown soft very highly calcareous sand. Diffuse to: |
| 100-170 | Light brown soft very highly calcareous sand. |



Classification: Supravescent, Regolithic, Supracalcic Calcarosol; medium, non-gravelly, sandy / sandy, very deep



Summary of Properties

- Drainage:** Rapidly drained. The soil never remains wet for more than a few hours at a time.
- Fertility:** Inherent fertility is very low. The soil has very limited nutrient retention capacity. Very high carbonate levels reduce availability of phosphorus, copper, manganese and zinc. Phosphorus applications are needed regularly (deficient at sampling site). Nitrogen levels are probably low, and depend on cropping history. Organic carbon levels are satisfactory.
- pH:** Alkaline at the surface, strongly alkaline with depth.
- Rooting depth:** 170 cm in pit, with few roots below 100 cm.
- Barriers to root growth:**
- Physical:** No physical barriers (apart from excessive drainage).
 - Chemical:** High pH from 66 cm is slightly limiting to root growth.
- Waterholding capacity:** Approximately 50 mm in the rootzone.
- Seedling emergence:** Satisfactory.
- Workability:** Loose surface is easily worked.
- Erosion Potential:**
- Water:** Low.
 - Wind:** Moderate.

Laboratory Data

| Depth cm | pH H ₂ O | 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 | |
| 0-11 | 8.6 | 8.0 | 75 | 0.14 | 0.48 | 0.9 | 14 | 180 | - | 1.7 | 0.17 | 1.60 | 5.20 | 0.42 | 5.9 | 5.75 | 0.86 | 0.05 | 0.47 | 1 |
| 11-33 | 9.0 | 8.1 | 76 | 0.10 | 0.35 | 0.5 | 3 | 130 | - | 1.6 | 0.14 | 0.96 | 1.70 | 0.58 | 4.9 | 4.18 | 1.13 | 0.08 | 0.30 | 2 |
| 33-66 | 9.2 | 8.2 | 81 | 0.11 | 0.37 | - | <2 | 110 | - | 1.3 | 0.13 | 0.63 | 0.95 | 0.18 | 3.8 | 2.46 | 1.61 | 0.14 | 0.23 | 4 |
| 66-100 | 9.6 | 8.2 | 79 | 0.22 | 1.35 | - | <2 | 240 | - | 4.8 | <0.1 | 0.70 | 0.38 | 0.32 | 2.6 | 1.02 | 1.71 | 0.40 | 0.55 | 15 |
| 100-170 | 9.7 | 8.3 | 80 | 0.68 | 7.85 | - | <2 | 230 | - | 7.2 | <0.1 | 0.87 | 0.67 | 0.24 | 3.4 | 1.04 | 1.26 | 1.10 | 0.53 | 32 |

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](#)

