TE6: Calcareous, Arenic, **Red-Orthic Tenosol**

One hundred and ten kilometres – south-south-west of Alice Springs, Northern Territory

General description of the soil

This soil has weak profile development apart from a slight increase in clay content with depth where a calcareous horizon occurs.

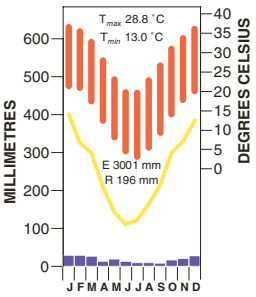
Distribution:	A very widespread soil throughout the arid zone, frequently closely associated with Arenic Rudosols.
Typical land use:	Reserved land and pastoral leases.
Common variants:	Depth to carbonate probably varies according to slope position.
World Reference Base:	Arenic Lixisol (incomplete data).
Other names:	Siliceous Sands.

Environment and location of the example profile

Landform:	Flank of a dune slope on a sand plain.
Parent material or substrate:	Aeolian transported sand.
Drainage class:	Rapidly drained.
Surface condition:	Loose.
Site disturbance:	Minor trampling.
Native vegetation:	Spinifex (*Triodia basedowii*) hummock grassland with occasional trees of desert oak (*Allocasuarina decaismeana*).

Site location

Site climate



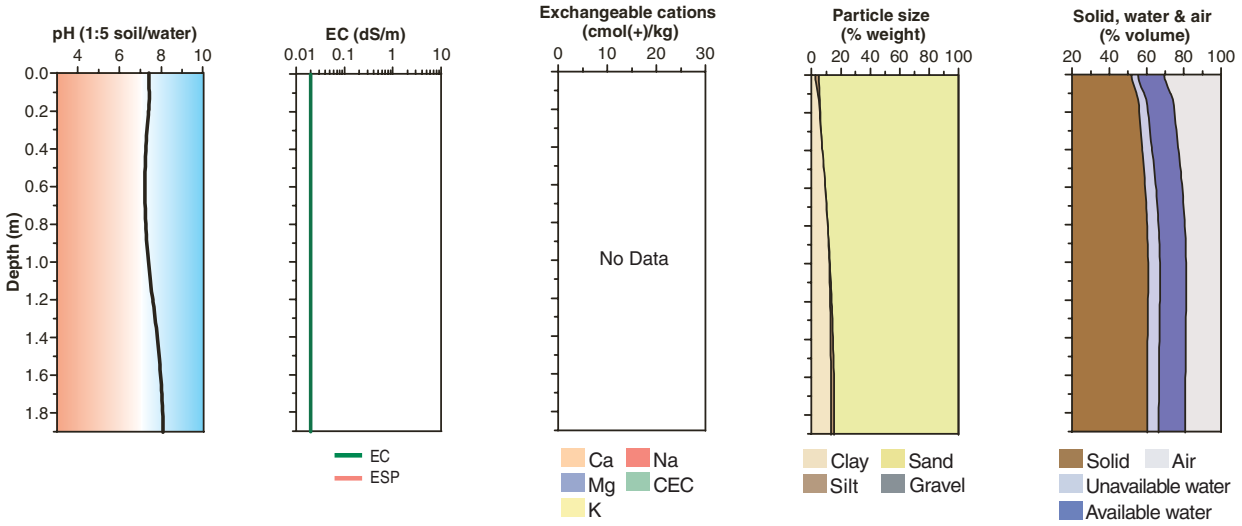
Soil morphology

Horizon	Depth (m)	Colour	Mottles	Texture	Structure			Consistence	Coarse fragments	Segregations	Boundary
					Grade	Shape	Size				
A1	0.00–0.10	red (2.5YR 4/6)	–	fine sand	massive	–	–	soft (dry)	–	–	abrupt slightly wavy
A3	0.10–1.20	dark red (2.5YR 3/6)	–	fine sand	massive	–	–	very friable (moist)	–	–	diffuse
B11	1.20–1.80	dark red (2.5YR 3/6)	–	fine sand to clayey fine sand	massive	–	–	slightly hard (dry)	–	–	diffuse
B12	1.80–1.93	dark red (2.5YR 3/6)	–	clayey fine sand				slightly hard (dry)	–	–	
B13k	1.93–2.29	red (3.5YR 4/8)	–	clayey fine sand					–	20–50% soft carbonate and 3–10% carbonate concretions	impenetrable carbonate pan at 2.29 m

Soil chemical and physical properties

Horizon	Sample Depth (m)	pH H_2O^A	pH $CaCl_2^E$	Elect. Cond. dS/m^A	$CaCO_3$ $\%^A$	Org. C %	Extr. P mg/kg	Tot. P $\%^A$	Tot. K $\%^A$	Cation exchange properties cmol(+)/kg							ESP %	Bulk dens. Mg/m^3	Particle size $\%^F$			
										Ca	Mg	K	Na	H+Al	CEC	ECEC			CS	FS	Silt	Clay
A1	0.00–0.10	7.4	6.1	< 0.03				0.010	1.5										35	60	2	3
A3	0.10–0.20	7.5	6.0	< 0.03				0.010	1.7										33	61	<1	6
A3	0.20–0.40	7.3	5.7	< 0.03																		
A3	0.40–0.90	7.2	5.7	< 0.03				0.010	1.6									1.6	27	61	<1	11
B11	1.20–1.70	7.9	6.2	< 0.03	<1																	
B12	1.70–1.90	8.1	6.7	< 0.03	<1			0.010	1.6										22	62	2	13

Key profile properties



General qualities of the soil

Infiltration:	Rapid.
Available water store:	Small per unit depth but moderate to large total store due to profile depth. The total water store is rarely filled.
Permeability:	Rapid.
Physical root limitations:	The hard carbonate pan at depth may restrict rooting depths of some species.
Erosion hazard:	Likely to be severe if vegetation is removed.
Nutrient availability:	Probably very low.
Toxicities:	None apparent.

Sparse hummock grassland of spinifex on dunes south of Alice Springs, Northern Territory

Acknowledgements: Soil image, soil description and laboratory data: CSIRO Land and Water. Stace et al. (1968), page 42, Profile A. Landscape image: CSIRO.