

TE7: Basic, Argic, Brown-Orthic Tenosol

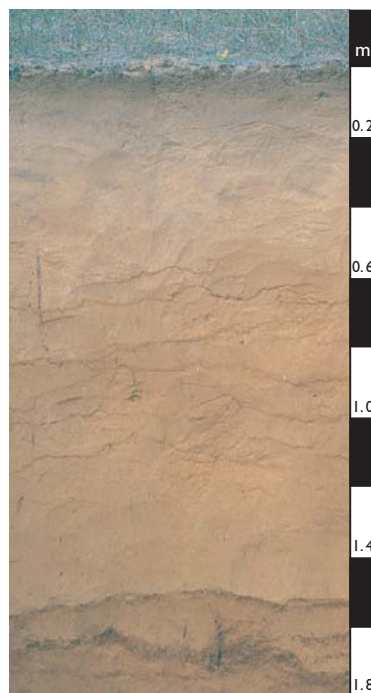
General description of the soil

This Tenosol has thick, weakly developed sandy A horizons and a loamy sand tenic B horizon, a feature of which is the presence of strongly developed clay lamellae.

Distribution:	Best known from the Southern Mallee region of South Australia and contiguous Victoria.
Typical land use:	Grazing of improved pastures.
Common variants:	Variable distribution of clay lamellae in the profile.
World Reference Base:	Arenic Luvisol.
Other names:	Probably have been called Siliceous Sands.

Environment and location of the example profile

Landform:	Low to moderate dunes on sand plain.
Parent material or substrate:	Aeolian sand.
Drainage class:	Rapidly drained.
Surface condition:	Loose.
Site disturbance:	Cultivated.
Native vegetation:	Sparse to mid-dense Mallee shrubland.

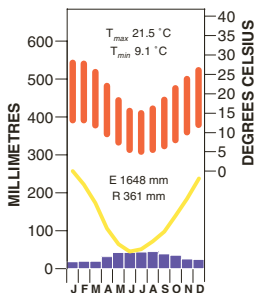


South-east of Murray Bridge, South Australia

Site location



Site climate



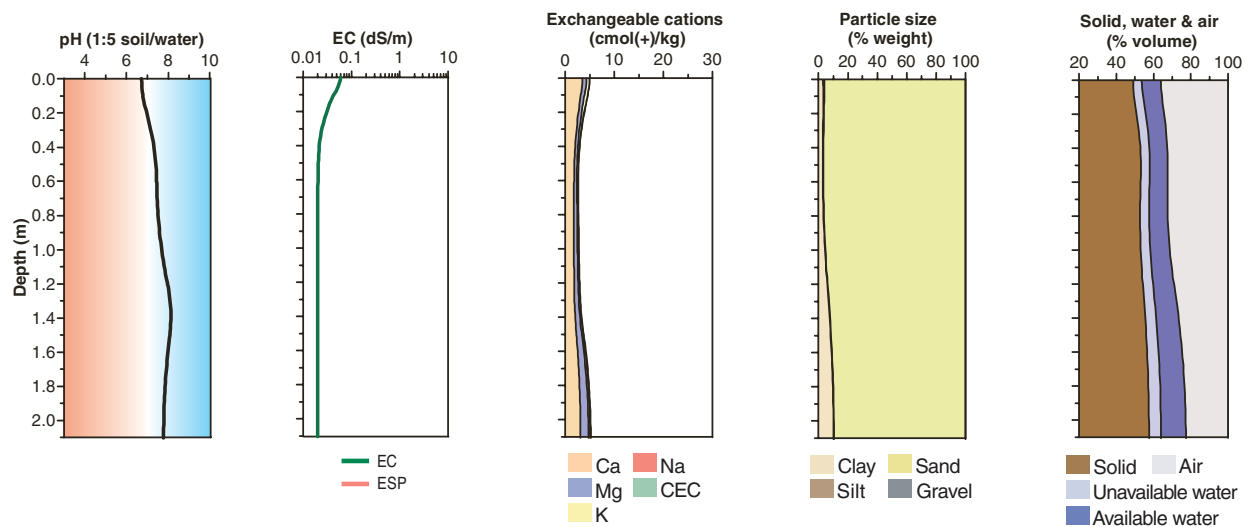
Soil morphology

Horizon	Depth (m)	Colour	Mottles	Texture	Structure			Consistence	Coarse fragments	Segregations	Boundary
					Grade	Shape	Size				
A11p	0.00–0.09	dark brown (7.5YR 3/2)	–	sand	single grain	–	–	very weak (dry)	–	–	clear
A12	0.09–0.15	brown (7.5YR 4/2)	–	sand	single grain	–	–	very weak (dry)	–	–	gradual
A21	0.15–0.40	brown (7.5YR 5/4)	–	sand	single grain	–	–	weak (dry)	–	–	diffuse
A22	0.40–0.60	strong brown (7.5YR 5/6)	–	sand	massive	–	–	weak (dry)	–	–	clear
A3	0.60–1.20	strong brown (7.5YR 5/6)	–	sand	massive	–	–	weak (dry)	–	2–10% clay lamellae (6–20 mm) (sandy loam texture)	diffuse
B21w	1.20–1.50	yellowish red (5YR 5/8)	–	loamy sand	massive	–	–	weak (dry)	–	2–10% clay lamellae (2–6 mm) (sandy loam texture)	sharp
B22w	1.50–2.10	strong brown (7.5YR 5/6)	–	loamy sand	massive	–	–	weak (dry)	–	10–20% clay lamellae (20–60 mm) (sandy clay loam texture)	

Soil chemical and physical properties

Horizon	Sample Depth (m)	pH H ₂ O ^A	pH CaCl ₂ ^B	Elect. Cond. dS/m ^A	CaCO ₃ % ^B	Org. C % ^D	Extr. P mg/kg ^A	Tot. P %	Tot. K %	Cation exchange properties ^E cmol(+)/kg						ESP %	Bulk dens. Mg/m ³	Particle size % ^A									
										Ca		Mg		K				Na		H+Al		CEC	ECEC	CS	FS	Silt	Clay
										Ca	Mg	K	Na	H+Al	CEC			ECEC	CS	FS	Silt						
A11p	0.00–0.09	6.7	6.0	0.06	<1	0.7	17			3.6	0.8	0.6	<0.1		4			65	31	1	3						
A12	0.09–0.15	6.7	6.0	0.03	1	0.3	4			3.0	0.7	0.8	0.1		3												
A21	0.15–0.40	7.2	6.4	0.02	<1	0.1	<2			2.2	0.6	0.3	0.1		2			64	32	<1	3						
A22	0.40–0.60	7.5	6.9	0.02	<1	<0.1	<2			1.7 ^G	0.5 ^G	0.2 ^G	0.1 ^G		2 ^G												
A3	0.60–1.20	7.5	6.8	0.02	<1	<0.1	<2			1.7 ^G	0.7 ^G	0.2 ^G	0.1 ^G		3 ^G			61	35	<1	4						
B21w	1.20–1.50	8.3	6.8	0.02	<1	<0.1	<2			1.8 ^G	0.8 ^G	0.3 ^G	0.1 ^G		3 ^G												
B22w	1.50–2.10	7.8	7.4	0.02	<1	<0.1	<2			3.0 ^G	1.6 ^G	0.3 ^G	0.2 ^G		5 ^G			53	38	<1	9						

Key profile properties



General qualities of the soil

Infiltration:	Rapid unless water-repellent.
Available water store:	Small in the root zone of annual pastures.
Permeability:	High to very high. Soil never remains saturated for more than a few hours.
Physical root limitations:	No apparent physical limitations to root growth.
Erosion hazard:	Very high when surface is exposed by cultivation or overgrazing. Surface layers may be water-repellent and are susceptible to wind erosion.
Nutrient availability:	Usually low organic matter. Phosphorus, nitrogen, copper and zinc are the most likely deficiencies.
Toxicities:	None apparent.



Mallee shrubland on dunes in the early morning

Acknowledgements: Soil image, soil description and laboratory data: Department of Water, Land and Biodiversity Conservation, South Australia. Site MM112 from McCord (1995). Landscape image: Arthur Mostead.