

SO5: Hypercalci, Mottled-Hypernatric, Red Sodosol

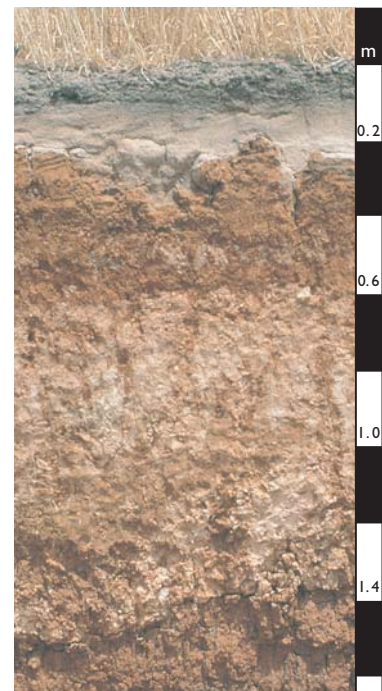
General description of the soil

A texture-contrast soil which is strongly sodic and mottled in the upper 0.2 m of the red clayey B horizon. A strongly developed carbonate horizon (Bk) is present below about 0.40 m (i.e. Hypercalci).

Distribution:	A common Sodosol in semi-arid southern Australia, particularly in the Mallee Region.
Typical land use:	Dryland farming.
Common variants:	These Red Sodosols may vary widely in morphology. A horizons range from sand to clay loam, and most have bleached A2 horizons; B horizon structure may be blocky rather than columnar or prismatic. Carbonate content can vary in kind and amount.
World Reference Base:	Alcalic Solonetz.
Other names:	Solodised Solonetz and Solodic soils.

Environment and location of the example profile

Landform:	Gently undulating plain.
Parent material or substrate:	Clayey sediments.
Drainage class:	Poorly drained.
Surface condition:	Loose.
Site disturbance:	Cultivation.
Native vegetation:	Mallee shrubland and woodland.

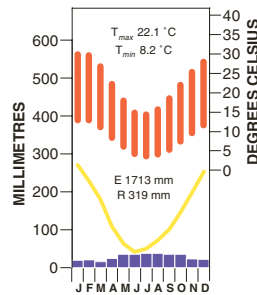


Pinaroo district, South Australia

Site location



Site climate



Soil morphology

Horizon	Depth (m)	Colour	Mottles	Texture	Structure			Consistence	Coarse fragments	Segregations	Boundary
					Grade	Shape	Size				
Ap	0.00–0.09	very dark greyish brown (10YR 3/2)	–	loamy sand	single grain	–	–	–	–	–	abrupt
A1	0.09–0.18	brown (10YR 4/3)	–	loamy sand	single grain	–	–	–	–	–	clear
A2e	0.18–0.23	light yellowish brown (10YR 6/4)	–	sand	single grain	–	–	–	–	–	sharp
B1t	0.23–0.38	yellowish red (5YR 4/8)	yellowish brown (10YR 5/8)	sandy light clay	strong	columnar	100–200 mm	–	–	–	gradual
B2tk	0.38–0.54	red (2.5YR 4/6)	yellowish brown (10YR 5/8)	medium clay	moderate	prismatic	2–5 mm	–	–	20–50% soft carbonate (>60 mm)	gradual
B3k	0.54–1.34	yellowish red (5YR 5/8)	brownish yellow (10YR 6/6)	sandy clay	massive	–	–	–	–	10–20% carbonate nodules (2–6 mm)	diffuse
C	1.34–1.90	red (2.5YR 4/6)	pale brown (10YR 6/3)	heavy clay	strong	prismatic	20–50 mm	–	–	–	–

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 ^C						ESP % ^A	Bulk dens. Mg/m ³	Particle size % ^A			
										cmol(+)/kg								CEC	ECEC	CS	FS
Ap	0.00–0.09	6.2	6.0	0.09	<1	0.8	24			2.5 ^D	0.9 ^D	0.3 ^D	0.2 ^D		3 ^D			62	34	<1	4
A2e	0.18–0.23	6.7	6.1	0.06	<1	0.2	5			0.9 ^D	0.4 ^D	0.1 ^D	0.2 ^D		2 ^D			53	44	1	3
B1t	0.23–0.38	8.8	7.2	0.22	2	0.3	3			3.7	7.3	1.0	4.5		13		35	32	32	2	34
B2tk	0.38–0.54	9.3	8.1	0.78	5	0.3	2			4.6	10.4	1.9	9.7		29		35	19	21	4	55

