HY2: Calcarosolic, **Salic Hydrosol**

General description of the soil

A highly calcareous, seasonally wet soil with a saline water table at shallow depths.

Distribution:	A common soil occupying mostly small areas in the Southern Mallee region of South Australia.
Typical land use:	Sparse grazing of salt tolerant species.
Common variants:	Variable amounts of hard calcrete are a feature in many of these soils.
World Reference Base:	Calcic Solonchak.
Other names:	Solonised Brown Soils and Mallee Soils.

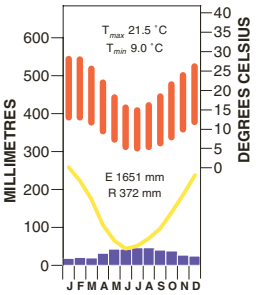
Environment and location of the example profile

Landform:	Saline flats within undulating plains. Lower parts have been inundated with saline groundwater.
Parent material or substrate:	Calcareous sediment and limestone.
Drainage class:	Very poorly drained.
Surface condition:	Firm.
Site disturbance:	Cultivated.
Native vegetation:	Mainly halophytes, particularly samphire.

A calcareous and saline profile, south-east of Murray Bridge, South Australia

Site location

Site climate



Soil morphology

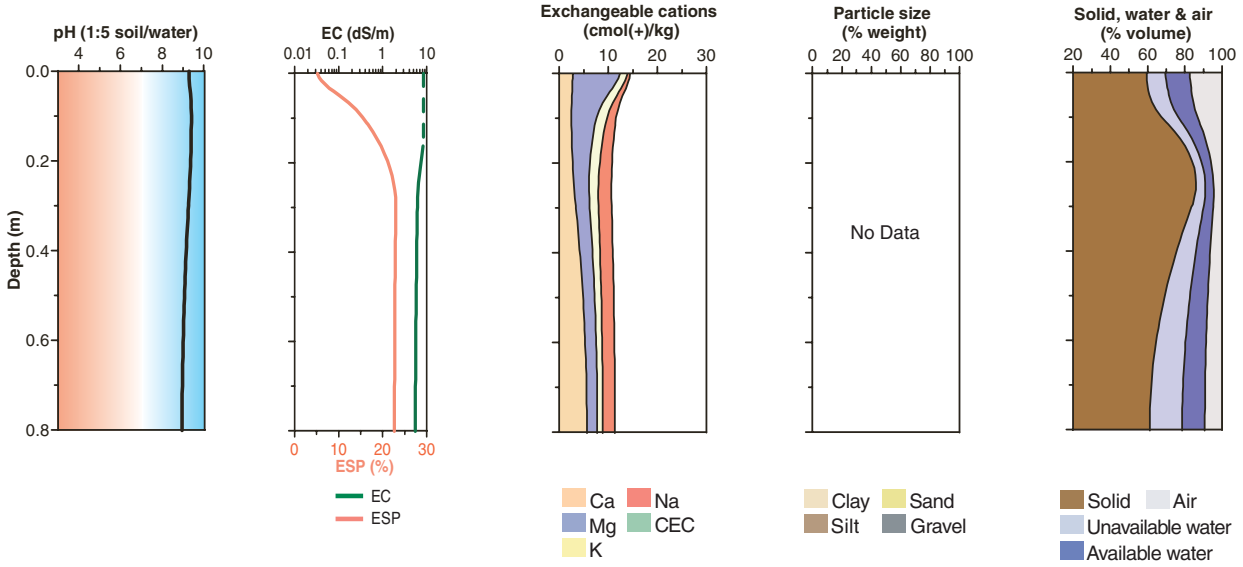
Horizon	Depth (m)	Colour	Mottles	Texture	Structure			Consistence	Coarse fragments	Segregations	Boundary
					Grade	Shape	Size				
A11	0.00–0.04	dark brown (7.5YR 3/2)	–	fine sandy clay loam	massive	–	–	very weak (wet)	–	2–10% carbonate nodules (20–60 mm) *highly calcareous	abrupt
A12	0.04–0.11	very dark grey (10YR 3/1)	–	fine sandy clay loam	massive	–	–	very weak (wet)	–	2–10% carbonate nodules (20–60 mm) *highly calcareous	gradual
B2km	0.11–0.30	brown (7.5YR 5/4)	–	sandy clay loam	massive	–	–	rigid (wet)	moderately cemented nodular calcrete pan	>50% carbonate nodules (>60 mm) *very highly calcareous	diffuse
Ck	0.30–0.80	very pale brown (10YR 7/3)	–	light sandy clay	massive	–	–	strong (wet)	10–20% limestone (20–60 mm)	*very highly calcareous	water table at 0.80 m

* Fine earth fraction

Soil chemical and physical properties

Horizon	Sample Depth (m)	pH H_2O[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[G] cmol(+)/kg							ESP %[A]	Bulk dens. Mg/m^3	Particle size %			
										Ca	Mg	K	Na	H+Al	CEC	ECEC			CS	FS	Silt	Clay
A11	0.00–0.04	9.3	9.2	20.60	12	2.2	10			2.7	9.7	1.5	0.5		12		4					
A12	0.04–0.11	9.5	9.0	7.64	15	1.1	6			2.3	3.6	2.7	2.0		12		17					
B2km	0.11–0.30	9.4	8.9	5.69	49	0.7	5			2.4	2.8	2.1	2.9		12		24					
Ck	0.30–0.80	9.0	8.6	5.64	60	0.3	6			5.3	2.2	1.2	2.5		11		23					

Key profile properties



General qualities of the soil

Infiltration:	Slow or less when saturated.
Available water store:	Moderate to small.
Permeability:	Probably moderate to low.
Physical root limitations:	Root growth may be restricted by hard calcrete and poor aeration.
Erosion hazard:	None apparent.
Nutrient availability:	If sown to salt tolerant pasture species then phosphorus is essential. Nitrogen levels will depend on the legume content of the pasture. Copper and zinc are marginal and will require occasional addition.
Toxicities:	Highly saline due to saline groundwater.

Saline land at Cooks Plain, south east of Murray Bridge, South Australia

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