

PO5: Silpanic, Humic, Semiaquic Podsol

General description of the soil

A Podsol with short-term saturation and a humic B horizon (B2h) that is underlain by a massive hardpan.

Distribution:	Occasional small occurrences throughout the east Australian Podsol zone.
Typical land use:	Nature conservation with limited clearing.
Common variants:	It is likely that considerable variation occurs in the nature of the hardpan.
World Reference Base:	Haplic Podzol.
Other names:	Humus Podzols.

Environment and location of the example profile

Landform:	Gently sloping coastal plain.
Parent material or substrate:	Massive hardpan substrate.
Drainage class:	Imperfectly drained.
Surface condition:	Hardsetting.
Site disturbance:	None.
Native vegetation:	Low woodland dominated by <i>Melaleuca viridiflora</i> .

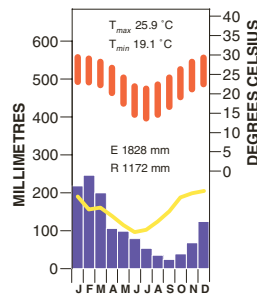


Shoalwater Bay, central Queensland

Site location



Site climate



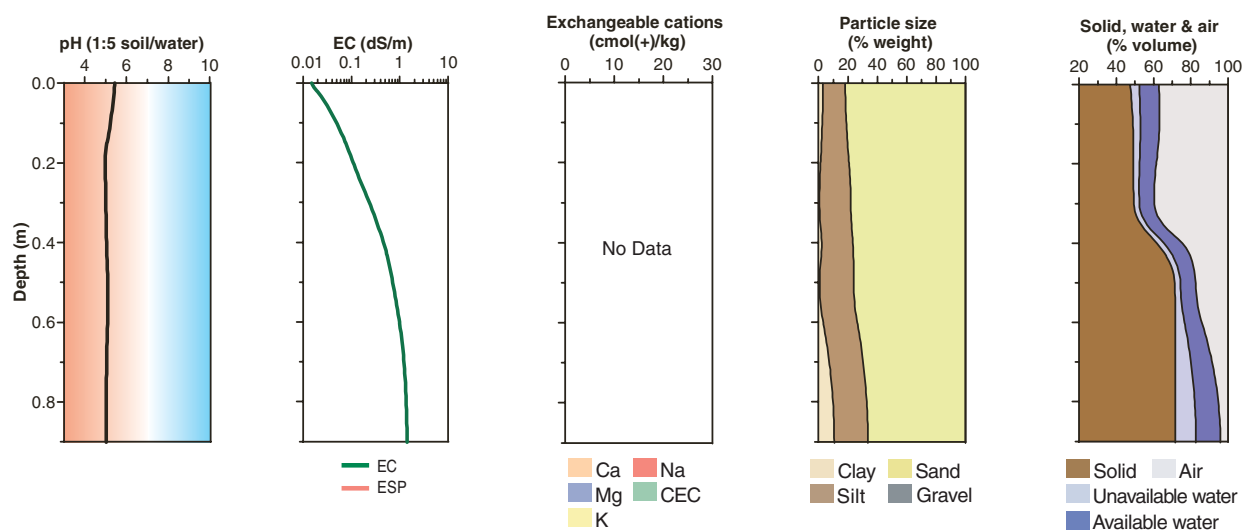
Soil morphology

Horizon	Depth (m)	Colour	Mottles	Texture	Structure			Consistence	Coarse fragments	Segregations	Boundary
					Grade	Shape	Size				
A11	0.00–0.02	grey (10YR 5/1)	–	loamy fine sand	massive	–	–	firm (moist)	–	–	sharp
A12	0.02–0.15	very dark grey (10YR 3/1)	–	loamy fine sand	massive	–	–	firm (moist)	–	–	diffuse
A13	0.15–0.20	dark grey (10YR 4/1)	–	loamy fine sand	massive	–	–	firm (moist)	–	–	gradual
A2e	0.20–0.38	pale brown (10YR 6/3) very pale brown (10YR 8/2 d)	–	fine sand	massive	–	–	firm (moist)	–	–	clear
B2h	0.38–0.43	black (10YR 2/1)	–	fine sand	massive	–	–	firm (moist)	–	–	sharp
D1	0.43–0.60	dark yellowish brown (10YR 4/4)	very dark brown (10YR 2/2) streaks	clayey fine sand	massive	–	–	very strong (dry)	–	massive hardpan	gradual
D2	0.60–0.90+	yellowish brown (10YR 5/6)	light grey (2.5Y 7/1) vertical streaks	light fine sandy clay loam	massive	–	–	very strong (dry)	<2% water worn metamorphic gravels	massive hardpan	

Soil chemical and physical properties

Horizon	Sample Depth (m)	pH H ₂ O ^A	pH CaCl ₂	Elect. Cond. dS/m ^A	CaCO ₃ %	Org. C % ^D	Extr. P mg/kg	Tot. P %	Tot. K %	Cation exchange properties cmol(+)/kg						ESP %	Bulk dens. Mg/m ³	Particle size % ^H					
										Ca	Mg	K	Na	H+Al	CEC			ECEC	CS	FS	Silt	Clay	
A11	0–0.02	5.5		<0.02		1.4	7																
A12	0.02–0.15	5.4		0.02		1.6	6		0.012														
A13	0.15–0.20	4.7		0.08		0.8	3																
A2e	0.20–0.38	5.0		0.08		0.5	2		0.009														
B2h	0.38–0.43	5.0		0.48		1.2	3		0.016														
D1	0.43–0.60	5.2		0.73		0.8	2		0.819														
D2	0.60–0.90+	5.0		1.48		0.1	1																

Key profile properties



General qualities of the soil

Infiltration:	Rapid unless the profile is saturated.
Available water store:	Small.
Permeability:	Moderate to high above the hardpan.
Physical root limitations:	Subsoil hardpan inhibits root development and saturation may restrict aeration in wet periods.
Erosion hazard:	Subject to wind erosion when vegetation is removed.
Nutrient availability:	Very low throughout.
Toxicities:	Can be saline at depth.



Low woodland of *Melaleuca viridiflora* on a near-coastal plain in the Shoalwater Bay area of central Queensland

Acknowledgements: Soil image, soil description and laboratory data: CSIRO Land and Water. Profile B873. Landscape image: CSIRO.