

PO8: Melacic, Humic, Aquic Podsol

General description of the soil

A Podsol with long-term saturation (months) and a strongly developed, weakly coherent humic B horizon (Bh). A dark, strongly acid A1 horizon is also a feature.

Distribution:	Known to be a common soil in the higher rainfall, near-coastal Podsol zone in eastern Australia. Also known to occur elsewhere in the southern Australian coastal zone.
Typical land use:	Nature conservation with some areas cleared for agriculture and forestry.
Common variants:	Horizon thickness may vary.
World Reference Base:	Haplic Podzol (no data on redox properties).
Other names:	Humus Podzols.

Environment and location of the example profile

Landform:	Level plain.
Parent material or substrate:	Coastal sand plain sediments.
Drainage class:	Poorly drained.
Surface condition:	Soft.
Site disturbance:	Cleared
Native vegetation:	<i>Melaleuca quinquenervia</i> open forest.

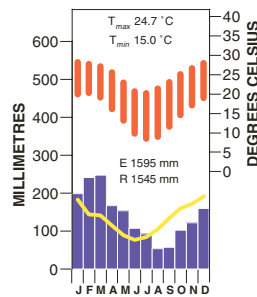


Bli Bli district, south-east Queensland

Site location



Site climate



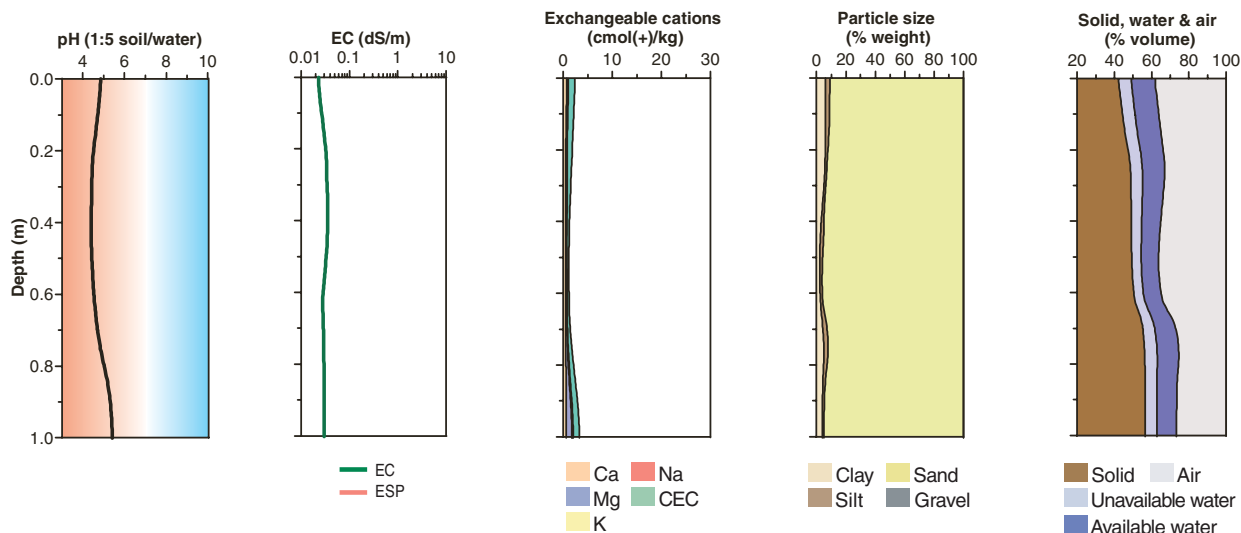
Soil morphology

Horizon	Depth (m)	Colour	Mottles	Texture	Structure			Consistence	Coarse fragments	Segregations	Boundary
					Grade	Shape	Size				
Ap	0.00–0.25	very dark grey (10YR 3/1)	–	loamy sand	weak	granular	2–5 mm	loose (moist)	–	–	clear
A21e	0.25–0.35	light yellowish brown (10YR 6/4)	–	sand	single grain	–	–	very weak (moist)	–	–	gradual
A22e	0.35–0.50	light grey (10YR 7/1)	<2% yellow distinct (5–15 mm)	sand	single grain	–	–	very weak (moist)	–	–	gradual
A23e	0.50–0.65	light grey (10YR 7/1)	–	sand	single grain	–	–	very weak (moist)	–	–	abrupt
Bh	0.65–1.00	black (10YR 2/1)	–	loamy sand				very weak (wet)	–	–	

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 %	Org. C % ^A	Extr. P mg/kg ^A	Tot. P %	Tot. K %	Cation exchange properties ^A						ESP %	Bulk dens. Mg/m ³	Particle size % ¹			
										cmol(+)/kg								CS	FS	Silt	Clay
Ap	0.00–0.10	4.9	4.3	0.02		1.4	81			0.7	0.1	0.1	0.1	1.3	2	–	65	26	3	6	
Ap	0.10–0.20	4.6	4.3	0.03		1.2	43			0.4	0.1	0.1	0.1	1.2	2	–	64	27	3	6	
Ap	0.20–0.25	4.3	4.3	0.04		0.8	14			0.3	0.1	0.1	0.2	1.2	2	–	67	26	1	6	
A21e	0.25–0.30	4.4	4.4	0.03		0.5	6			0.6	0.1	0.1	0.1	0.7	2	–	70	23	1	6	
A22e	0.30–0.40	4.4	4.4	0.04		0.2	2			0.5	0.2	0.1	0.1	0.5	1	–	73	22	1	4	
A22e	0.40–0.50	4.3	4.5	0.04		0.1	2			0.4	0.1	<0.1	0.1	0.3	1	–	74	21	3	2	
A23e	0.50–0.60	4.4	4.6	0.03		0.1	2			0.6	0.1	<0.1	0.1	0.2	1	–	72	25	1	2	
A23e	0.60–0.65	4.5	4.6	0.02		0.2	2			0.6	0.1	<0.1	<0.1	0.2	1	–	74	23	1	2	
Bh	0.65–0.70	4.6	4.6	0.03		0.6	2			0.4	0.1	<0.1	0.1	0.4	1	–	73	20	3	4	
Bh	0.70–0.80	4.6	4.4	0.03		0.9	2			0.4	0.1	<0.1	0.1	0.7	1	–	75	15	4	6	
Bh	0.80–0.90	5.5	4.3	0.03		1.1	6			0.6	0.6	0.1	0.2	1.2	3	–	81	14	1	4	
Bh	0.90–1.00	5.6	4.2	0.03		1.7	18			0.6	1.7	0.1	0.3	1.5	4	–	79	16	1	4	

Key profile properties



General qualities of the soil

Infiltration:	Rapid unless profile is saturated.
Available water store:	Moderate to large.
Permeability:	High above the Bh horizon.
Physical root limitations:	Aeration is limiting because the profile is saturated for long periods (months).
Erosion hazard:	Very low.
Nutrient availability:	Very low.
Toxicities:	None apparent.



Paperbark (*Melaleuca quinquenervia*) forests are commonly associated with Aquic Podosols.

Acknowledgements: Soil image: CSIRO Land and Water. Soil description and laboratory data: Department of Natural Resources and Mines, Queensland. Site 3 in Aitken et al. (1993). Landscape image: Alan Fox.