

CH11: Ferric, Dystrophic, Yellow Chromsol

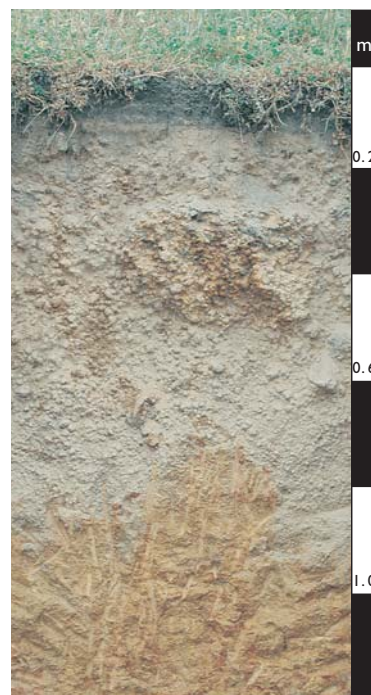
General description of the soil

A non-sodic, texture-contrast soil with a reddish yellow clayey B2 horizon of very low base status (i.e. Dystrophic). Up to 60% of ironstone gravel occurs throughout the A and B2 horizons.

Distribution:	Widespread in south-west Western Australia on ferricrete plateaux and upper slopes of valleys.
Typical land use:	Forestry.
Common variants:	A common and associated soil has a brown rather than yellow subsoil.
World Reference Base:	Abruptic Lixisol (incomplete data).
Other names:	Lateritic Podzolic Soils.

Environment and location of the example profile

Landform:	Upper slope.
Parent material or substrate:	Weathered granite and colluvium.
Drainage class:	Moderately well-drained.
Surface condition:	Firm.
Site disturbance:	Jarrah (<i>Eucalyptus marginata</i>) and Marri (<i>Eucalyptus calophylla</i>) sclerophyll forest.

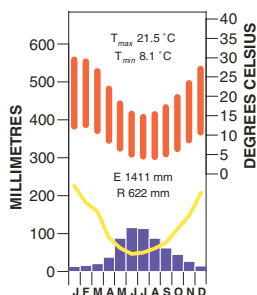


Near Blackwood, south-west Western Australia

Site location



Site climate



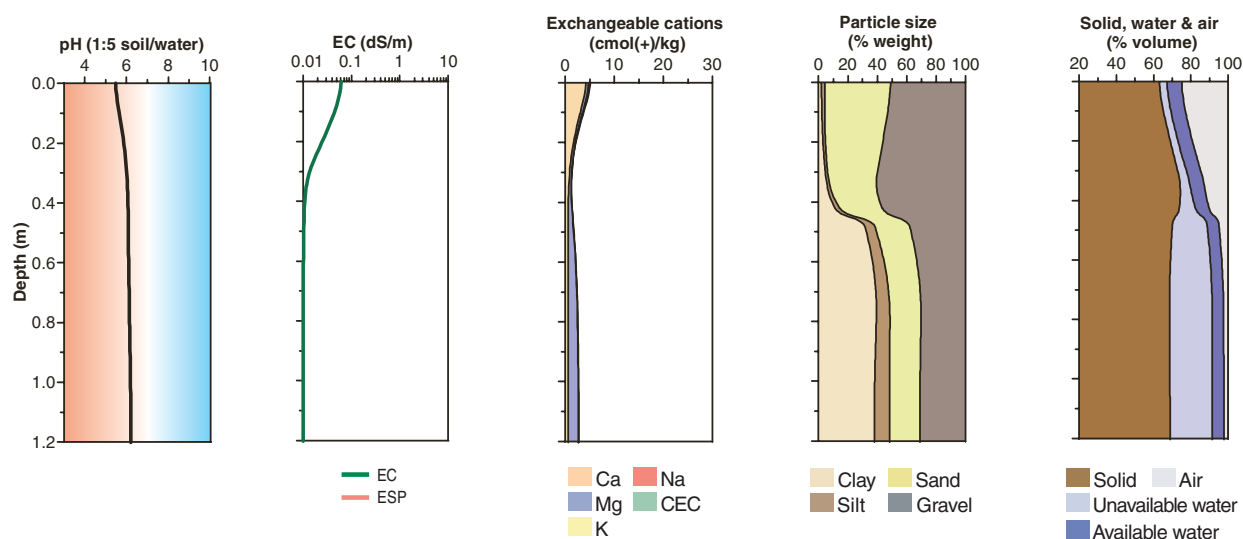
Soil morphology

Horizon	Depth (m)	Colour	Mottles	Texture	Structure			Consistence	Coarse fragments	Segregations	Boundary
					Grade	Shape	Size				
A1c	0.00–0.10	very dark grey (7.5YR 3/0)	high organic matter	gravelly loamy sand	weak	crumb	–		40% smooth-faced ironstone gravel (2–20 mm)	–	gradual
A21c	0.10–0.35	reddish yellow (7.5YR 6/6)	–	gravelly loamy sand	single grain	–	–		50% smooth-faced ironstone gravel (2–20 mm)	–	gradual
A22c	0.35–0.45	reddish yellow (7.5YR 6/6)	5% orange faint	sandy gravel	massive	–	–		60% smooth-faced ironstone gravel (2–30 mm)	–	clear
B2t	0.45–0.80	reddish yellow (7.5YR 7/8)	10% red	gravelly light clay	moderate	polyhedral			20% ironstone gravel and quartz (2–15 mm)	–	gradual
B3	0.80–1.20	brownish yellow (10YR 6/8)	20% red and yellow	silty light clay	moderate to strong	polyhedral and subangular blocky			5% ironstone gravel and quartz (2–15 mm)	–	gradual
Cr	1.20 +	weathered granite		–	–	–	–				

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	Tot. P % ^B	Tot. K %	Cation exchange properties ¹ cmol(+)/kg							ESP %	Bulk dens. Mg/m ³	Particle size % ⁸										
																			Ca	Mg	K	Na	H+Al	CEC	ECEC	CS	FS	Silt	Clay
A1c	0.00–0.10	5.5	4.8	0.06		4.0		0.024		4.0	0.5	0.2	0.2							58	33	5	4						
A21c	0.10–0.35	6.0	5.1	0.01		0.3		0.005		0.7	0.2	< 0.1	< 0.1							59	33	3	5						
A22c	0.35–0.45	6.1	5.2	0.01		0.3		0.006		0.5	0.5	< 0.1	< 0.1							65	21	5	10						
B2t	0.45–0.80	6.1	6.1	0.01		0.3		0.007		0.5	1.8	< 0.1	< 0.1							19	11	12	58						
B3	0.80–1.20	6.2	6.2	0.01		0.2		0.006		0.6	2.1	< 0.1	0.1							16	14	15	55						

Key profile properties



General qualities of the soil

Infiltration:	Rapid.
Available water store:	Small.
Permeability:	Moderate in B horizon.
Physical root limitations:	No apparent limitations although gravels restrict soil volume for root growth.
Erosion hazard:	Moderately low.
Nutrient availability:	Low and dependent on the maintenance of organic matter.
Toxicities:	None recorded.



Morning mist in the Jarrah forest, Darling Plateau, Western Australia

Acknowledgements: Soil image: Agriculture Western Australia. Soil description and laboratory data: Lennard Series in Tille (1996). Landscape image: Lochman Transparencies.