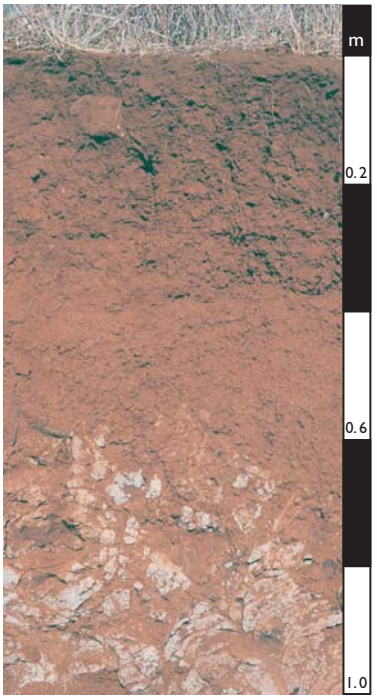
FE5: Haplic, Eutrophic, **Red Ferrosol**



Mt Surprise, north Queensland

General description of the soil

A strongly structured Red Ferrosol with a moderately high base status (i.e. Eutrophic). No other diagnostic features are present, hence the term Haplic (simple).

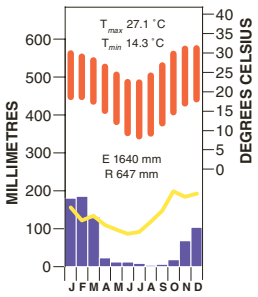
Distribution:	A common soil formed on basalt in the semiarid to subhumid regions of northern Australia.
Typical land use:	Sparse grazing of native pastures by beef cattle.
Common variants:	Depth to hard basalt is variable.
World Reference Base:	Eutric Nitisol (incomplete data).
Other names:	Euchrozems.

Environment and location of the example profile

Landform:	Gently undulating plain.
Parent material or substrate:	Basalt.
Drainage class:	Well-drained.
Surface condition:	Firm.
Site disturbance:	None.
Native vegetation:	Eucalypt open woodland.

Site location

Site climate



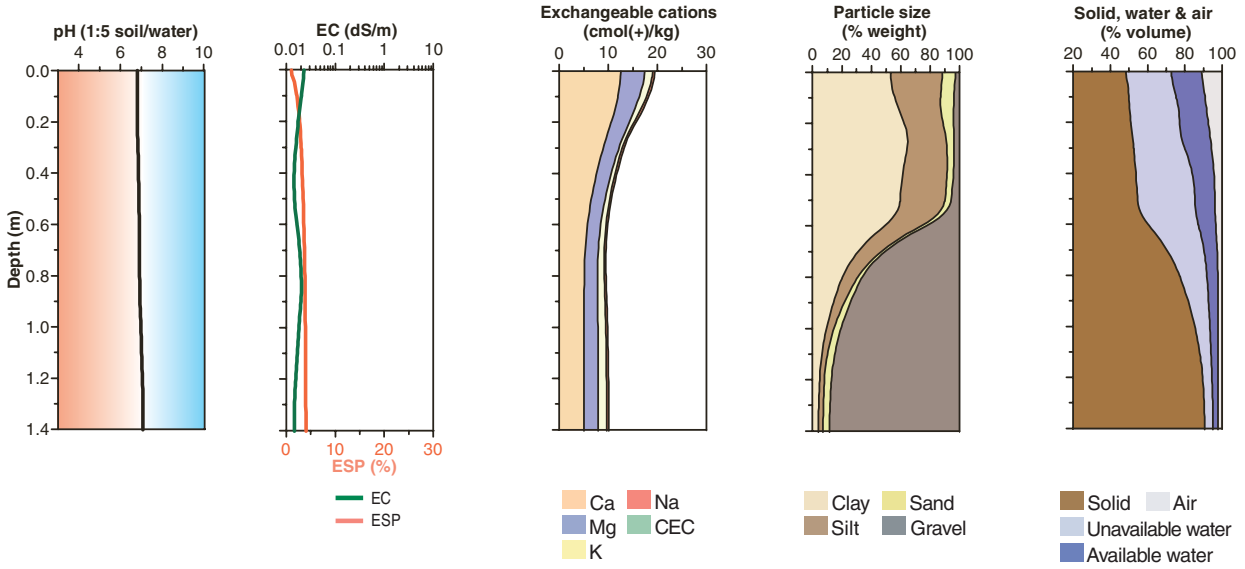
Soil morphology

Horizon	Depth (m)	Colour	Mottles	Texture	Structure			Consistence	Coarse fragments	Segregations	Boundary
					Grade	Shape	Size				
A1	0.00–0.10	dark reddish brown (5YR 3/3)	–	heavy loam	moderate	angular blocky	5–10 mm	firm (dry)	2–10 % basalt gravel	–	gradual
A3	0.10–0.20	dark reddish brown (2.5YR 3/4)	–	clay loam	moderate	angular blocky	5–10 mm	very firm (dry)	2–10 % basalt gravel	–	gradual
B1	0.20–0.30	dark red (2.5YR 3/6)	–	clay loam	moderate	subangular blocky	10–20 mm	very firm (dry)	2–10 % basalt gravel	–	gradual
B21	0.30–0.60	dark red (2.5YR 3/6)	–	light clay	strong	subangular blocky	10–20 mm	very firm (dry)	2–10 % basalt gravel	–	gradual
B22	0.60–0.80	dark red (2.5YR 3/6)	–	light medium clay	strong	subangular blocky	10–20 mm	very firm (dry)	20–50% basalt gravel	–	clear
BC	0.80–1.40	dark red (2.5YR 3/6)	–	light medium clay					50–90% weathered basalt	–	
C	1.40–1.50	hard unweathered basalt	–	–	–	–	–	–	–	–	

Soil chemical and physical properties

Horizon	Sample Depth (m)	pH H_2O[A]	pH $CaCl_2$	Elect. Cond. dS/m[A]	$CaCO_3$ %	Org. C %[G]	Extr. P mg/kg[B]	Tot. P %[A]	Tot. K %[A]	Cation exchange properties[A] cmol(+)/kg							ESP %[C]	Bulk dens. Mg/m^3	Particle size %[F]			
										Ca	Mg	K	Na	H+Al	CEC	ECEC			CS	FS	Silt	Clay
A1	0.00–0.10	6.8		0.02		2.2	194	0.29	0.38	12.6	4.9	1.6	0.5				2		4	4	31	48
A3	0.10–0.20	6.8		0.02		1.6	173	0.27	0.37	11.7	3.8	1.5	0.5				3		1	8	25	55
B1	0.20–0.30	6.8		0.02		1.0	148	0.24	0.34	9.6	3.2	0.2	0.4				3		1	3	21	57
B21	0.30–0.60	6.9		0.01		0.4	54	0.17	0.31	5.5	2.6	1.0	0.3				4		1	3	29	57
B22	0.60–0.80	6.9		0.02																		
BC	0.80–0.90	6.9		0.02		0.2		0.26	0.26	5.0	2.9	1.7	0.4				4		10	17	25	47
BC	0.90–1.20	7.0		0.02				0.19	0.22													
BC	1.20–1.40	7.1		0.01															12	20	23	30

Key profile properties



General qualities of the soil

Infiltration:	Rapid.
Available water store:	Moderate.
Permeability:	High.
Physical root limitations:	Hard basalt at variable depths.
Erosion hazard:	Moderate on slopes.
Nutrient availability:	High.
Toxicities:	None.

Undulating basalt plains and lava tubes in the Undara Volcanic National Park, north Queensland

Acknowledgements: Soil image, soil description and laboratory data: CSIRO Land and Water. Profile T91. Landscape image: Bill Bachman.