



**Landscape**— Rolling to steep hills on Laidlaw Volcanics at Mount Stromlo. Slopes 10 - >30%, local relief ~90 m, elevation 600 - 780 m. Extensively cleared tall open-forest.

**Soils**— Very shallow (<25 cm), well-drained Hypocalcic Paralithic Tenosols (Lithosols) and shallow (<50 cm), well-drained stony Red Chromosols (Red Podzolic Soils)

**Qualities and limitations**— widespread shallow soils, localised poor moisture availability, widespread non-cohesive soils, localised steep slopes, widespread rock outcrop hazard, widespread recharge zone, localised discharge zone, localised gully erosion hazard, widespread sheet erosion hazard, localised high run-on, localised poor drainage.

## LOCATION AND SIGNIFICANCE

Occurs in the Mount Stromlo area west of Canberra and is distinguished by soils with thicker, deeper bleached A2 horizons than generally occur on its parent. First described in Jenkins (2000). Type location is the slopes and crest of Mount Stromlo (MGA grid reference 682100E, 6089500N, grid zone 55).

### Variants

None.

### Included landscapes

Some of the lower slopes mapped as this variant include small areas of Burra (bau) soil landscape.

## LANDSCAPE

### Landform

Rolling hills to steep hills, slopes are long (> 400 m) varying from 10 - >30%. Local relief is around 100 m with elevations from 600 - 780m. Landform elements include a narrow crest and ridge, moderately to steeply inclined hillslopes with long footslopes on the west flank with minor subdued drainage depressions. Landform elements include a narrow crest, moderately to steeply inclined hillslopes. On the west flank occur long footslopes with minor subdued drainage depressions.

### Geology

Laidlaw Volcanics, comprising dark to light grey porphyritic rhyodacite ignimbrite.

Source: DMR 2002.

### Vegetation

Tall open-forest (dry sclerophyll forest) and woodland, highly disturbed for pine plantations, and regenerating in some areas.

## Land use

Prior to 2003 this area was part of the Mount Stromlo Pine Forest. The area has now been assisted to return to a more native vegetation assemblage. The area is used for recreational mountain bike riding and also hosts the Stromlo Observatory and associated ANU and other buildings used in the astronomy field. Canberra's water supply treatment works and a horse agistment property are also located within this soil landscape.

## Land degradation

The soils of this landscape are highly disturbed, with historical erosion after initial clearing shortly after settlement arrested by planting of pine trees. Deep ripping and contour banking for plantation establishment has brought much of the subsoil to the surface, impacting upon infiltration and soil structure. Since the 2003 fires the area has been converted to native vegetation and will eventually re-establish a more natural soil profile. Areas of concern are the multitude of bicycle tracks that can concentrate water flows and lead to erosion. Sheet erosion is widespread and many rills are evident that could become major gullies if left unchecked.

## Erosion hazard

Land use	Non-concentrated flows	Concentrated flows	Wind
nature conservation	slight	slight	slight
plantation forestry	high	high	moderate

## SOILS

### Soil variation and distribution

Very shallow (<25 cm), well-drained Hypocalcic Paralithic Tenosols (Lithosols) are found on crests and slopes associated with rock outcrop, whilst shallow (<50 cm), well-drained stony Red Chromosols (Red Podzolic Soils) have been observed on slopes. Deep bleached A2 horizons are usually present.

## QUALITIES AND LIMITATIONS

### Land capability

Urban Capability	C (D)	Soil Regolith Class	R3 (R4)
Limitations to land use			
Grazing	moderate to very high	Cultivation	high to extreme
Urban	moderate to high		
Landscape			
Steep slopes	localised	Mass movement hazard	not observed
Rock outcrop	widespread	Rockfall hazard	not observed
Foundation hazard	not observed	Complex terrain	not observed
Productive arable land	not observed		
Soils			
Shallow soils	widespread	Complex soils	not observed
Poor moisture availability	localised	Non-cohesive soils	widespread
Hydrology			
High run-on	localised	Poor drainage	localised
Permanently high watertables	not observed	Permanent waterlogging	not observed
Seasonal waterlogging	not observed	Flood hazard	not observed
Erosion			
Wind erosion hazard	not observed	Wave erosion hazard	not observed
Gully erosion hazard	localised	Sheet erosion hazard	widespread
Streambank erosion hazard	not observed		
Salinity			
Recharge zone	widespread	Discharge zone	localised
Salinity hazard	not assessed	Seepage scalds	not observed
Salt stores	low		

## FACETS

cawc(1)— Crests and slopes associated with rock outcrop

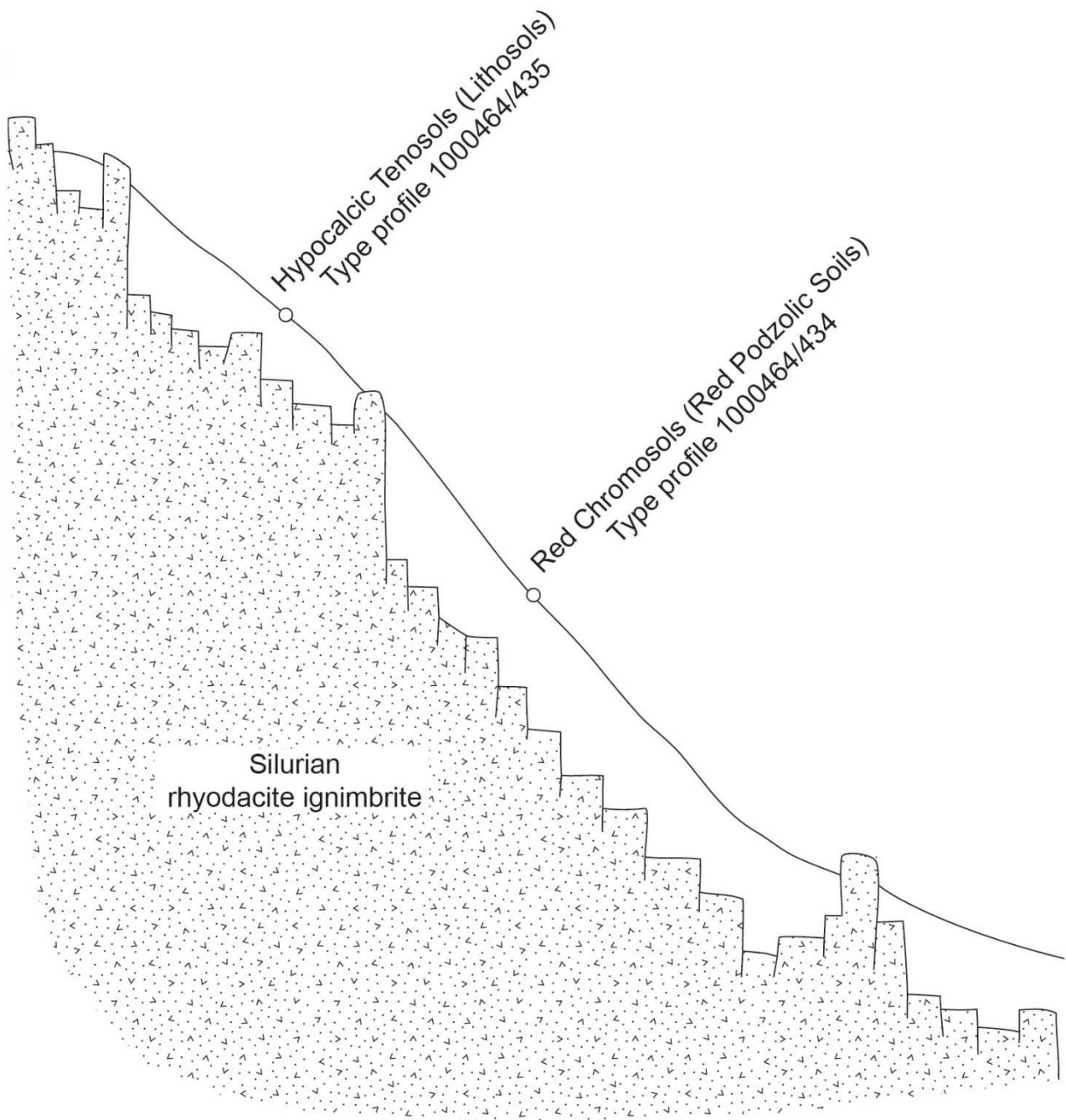
<b>Soils</b>	Very shallow (<25 cm), well-drained Hypocalcic Paralithic Tenosols (Lithosols).
<b>Type Profile(s)</b>	Hypocalcic Tenosol (Lithosol): Soil Landscapes of the Canberra 1:100 000 Sheet (1000464) profile 435 (Master Type Profile)
<b>HGL Reference</b>	Typically corresponds with HGL 25 (Uriarra Road) MA 1 and HGL 11 (Kambah Pools) MA 1.

cawc(2)— Upper slopes

<b>Soils</b>	Shallow (<50 cm), well-drained stony Red Chromosols (Red Podzolic Soils).
<b>Type Profile(s)</b>	Red Chromosol (Red Podzolic Soil): Soil Landscapes of the Canberra 1:100 000 Sheet (1000464) profile 434 (Master Type Profile)
<b>HGL Reference</b>	Typically corresponds with HGL 25 (Uriarra Road) MA 2/3 and MA 4/5 and HGL 11 (Kambah Pools) MA 2 and MA 3/5.

Crests and areas associated with rock outcrop

Slopes



*Schematic cross-section of the Campbell variant c (cawc) soil landscape, showing facets and soil types*

## REFERENCES

DMR 2002. New South Wales Statewide Geology coverage – 1:250 000 scale. Department of Mineral Resources, Sydney.

Jenkins B.R. 2000, Soil Landscapes of the Canberra 1:100 000 Sheet map and report, Department of Land and Water Conservation, Sydney

## NOTES

(1) This report describes reconnaissance soil landscape information mapped at 1:100,000 scale and does not negate the need for site assessment at a scale suitable to the land use or development under consideration.

(2) 'Not observed' means unlikely to be found. 'Localised' means observed to a level considered significant for land management. 'Widespread' means prevalent and significant over most of the landscape. 'None recorded' means no occurrence has been recorded. 'Not assessed' means no result has been recorded for this attribute and it may or may not be present in the soil landscape.

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