

Landscape— Moderately inclined to precipitous mountains with summit cliffs 20 - 50 m high on Devonian volcanics in the far NW ACT. Slopes 12 - 100%, local relief >300 m, elevation 770 - 1420 m. Uncleared open-forest.

Soils— Very shallow (<25 cm), rapidly drained Leptic Rudosols (Lithosols) and shallow to moderately deep (<50 - 100 cm), imperfectly to well-drained Red, Brown and Yellow Kurosols (Red and Yellow Podzolic Soils).

Qualities and limitations— widespread shallow soils, localised non-cohesive soils, localised periodically frozen soils, widespread steep slopes, widespread rock outcrop hazard, localised rockfall hazard, localised mass movement hazard, widespread foundation hazard, widespread recharge zone, localised wind erosion hazard, localised gully erosion hazard, widespread sheet erosion hazard, widespread high run-on, localised seasonal waterlogging.

LOCATION AND SIGNIFICANCE

Rolling to precipitous mountains on Devonian volcanics of the Brindabella Ranges to the west of Canberra. Located from Mount Coree to Mount Blundell and incorporating the headwaters of Condor Creek and part of the Lower Cotter catchment area. Found more extensively outside of the ACT. Type location is on the eastern flank of Mount Coree in the Brindabella Range (MGA grid reference 662900E, 6091800N, grid zone 55).

Variants

None.

Included landscapes

None.

LANDSCAPE

Landform

Moderately inclined to precipitous mountains with slopes 12 - 100%, local relief >300 m and elevation 770 - 1420 m. Slopes are long (>300 m) and mostly linear, steepening towards summits where cliffs 20 - 50 m high may be found.

Geology

Subaerial-erupted porphyritic ignimbrites of the Devonian-aged Mountain Creek Volcanic formation. Mount Coree is suggested to be an intrusive variant of the sequence.

Source: DMR 2002.

Vegetation

Uncleared alpine and semi-alpine communities with *Eucalyptus pauciflora* (snow gum), *E. dalrympleana* (mountain gum), *E. dives* (broad-leaved peppermint), *E. robertsonii* subsp. *hemisphaerica* (Robertsons peppermint) and *E. viminalis* (ribbon gum).

Source: Office of Environment and Heritage (2011). A small area of native regrowth occurs in areas of former pine plantation on lower slopes near Blundells Flat.

Land use

Mostly enclosed within the Namadgi National Park, with parts of the lower slopes in the Blue Range area occurring within the Lower Cotter catchment.

Land degradation

There is evidence of minor old-growth forestry operations prior to this area becoming National Park. Areas of mid to lower slopes in the Blue Range area were covered by pine plantations prior to the 2003 wildfires. Areas of former pine plantations are returning to native forest both naturally and with the assistance of planting programs. Soils in the former pine forest are degraded due to mechanical soil disturbance during plantation establishment. Contour ripping has mixed soil horizons and in some cases totally inverted the soil profile. Surface soil erosion was particular prevalent during periods of establishment and harvesting. Topsoils were further degraded by the 2003 wildfires.

Erosion hazard

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

SOILS

Soil variation and distribution

Very shallow (<25 cm), rapidly drained Leptic Rudosols (Lithosols) occur on scree slopes and where bedrock is close to the surface, whilst shallow to moderately deep (< 50 - 100 cm), imperfectly to well-drained Red, Brown and Yellow Kurosols (Red and Yellow Podzolic Soils) are common on the slopes.

Shallow stony sandy to silty soils are common in steeper parts of this landscape. Rock outcrops and cliffs are found at summits and on the steeper slopes.

Rock screes are found in many of the gullies and on slopes below cliffs and bedrock outcrops. High organic content within these screes at higher altitudes allows for moisture and nutrient retention. Although 90% rock, many rock screes are found in large well-shaded gullies and drainage lines. The screes often contain enough soil material to support vegetation and biotic communities.

On upper slopes the soils are often shallow stony, colluvial influenced duplex soils with acidic clay rich subsoils (B horizons). On lower slopes similar but deeper duplex soils develop commonly with gravel content and size decreasing towards the base of the slope. High moisture content, cold temperatures, high organic matter input from the native forests and high clay content from the weathered volcanic rocks creates a relatively healthy soil landscape even though soils can be shallow or absent in some steeper areas. However the soils are fragile and disturbance can result in soil erosion.

QUALITIES AND LIMITATIONS

Land capability

Urban Capability	E (D)	Soil Regolith Class	R1 (R2, R3)
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Limitations to land use

Grazing	high to extreme	Cultivation	very high to extreme
Urban	high to extreme		

Landscape

Steep slopes	widespread	Mass movement hazard	localised
Rock outcrop	widespread	Rockfall hazard	localised
Foundation hazard	widespread	Complex terrain	not observed
Productive arable land	not observed		

Soils

Shallow soils	widespread	Complex soils	not observed
Poor moisture availability	not observed	Non-cohesive soils	localised
Hydrology			
High run-on	widespread	Poor drainage	not observed
Permanently high watertables	not observed	Permanent waterlogging	not observed
Seasonal waterlogging	localised	Flood hazard	not observed
Erosion			
Wind erosion hazard	localised	Wave erosion hazard	not observed
Gully erosion hazard	localised	Sheet erosion hazard	widespread
Streambank erosion hazard	not observed		
Salinity			
Recharge zone	widespread	Discharge zone	not observed
Salinity hazard	not observed	Seepage scalds	not observed
Salt stores	low		

FACETS

bri(1)— Crests and rock screens

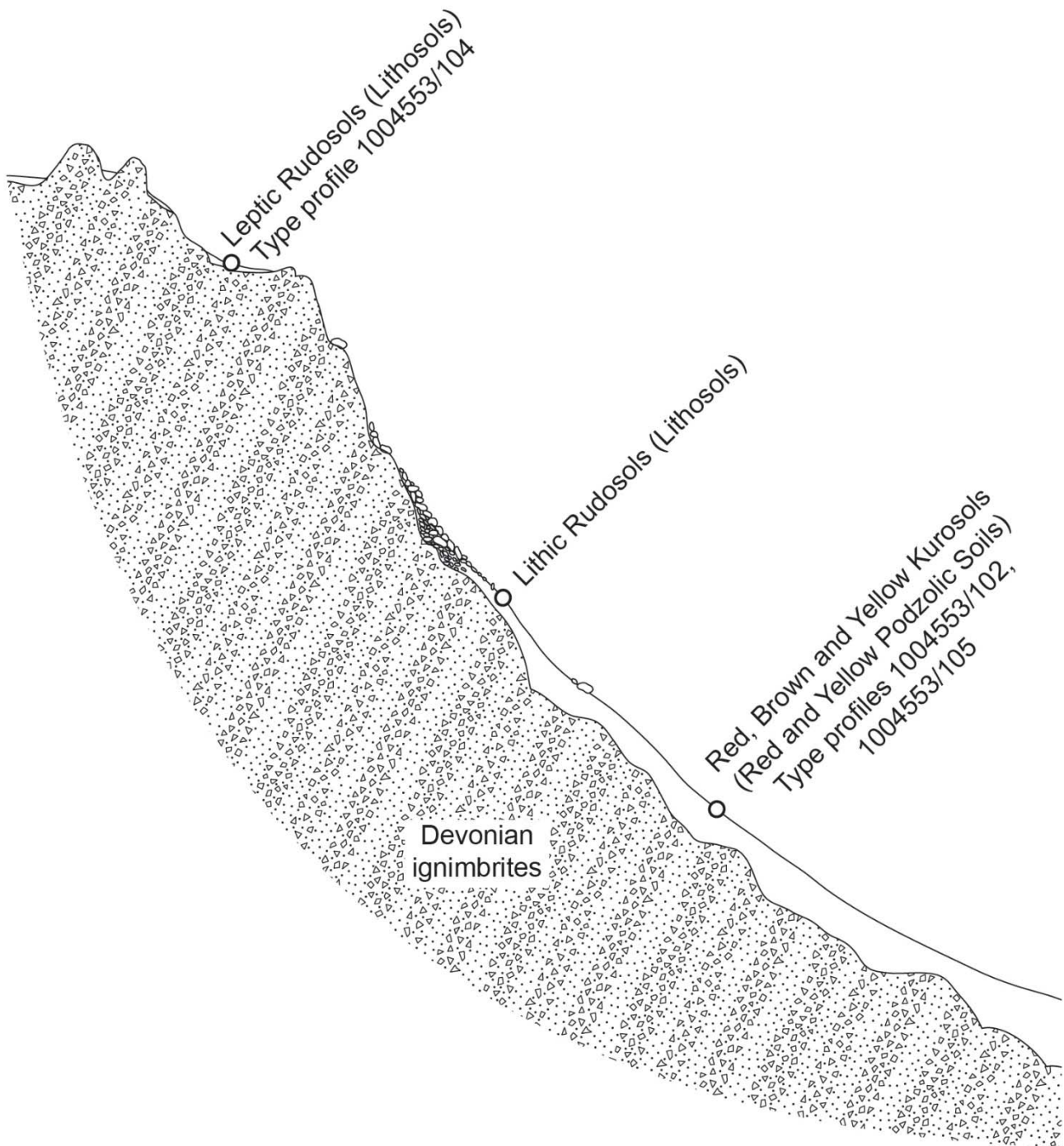
Soils	Very shallow (<25 cm), rapidly drained Leptic Rudosols (Lithosols)
Type Profile(s)	Leptic Rudosol (GSG not recorded): MSBP - Brindabella Soils Benchmarking Project (1004553) profile 104 (Master Type Profile)
HGL Reference	Typically corresponds with: HGL 3 (Brindabella) MA 1.

bri(2)— Slopes

Soils	Shallow to moderately deep (<50 - 100 cm), well to imperfectly drained Red, Brown and Yellow Kurosols (Red and Yellow Podzolic Soils) and Lithic Rudosols (Lithosols) where bedrock is close to the surface.
Type Profile(s)	Red Kurosol (GSG not recorded): MSBP - Brindabella Soils Benchmarking Project (1004553) profile 102 (Master Type Profile) Brown Kurosol (GSG not recorded): MSBP - Brindabella Soils Benchmarking Project (1004553) profile 105 (Master Type Profile)
HGL Reference	Typically corresponds with: HGL 3 (Brindabella) MA 2.

Crests and rock screens

Slopes



Schematic cross-section of the Brindabella (bri) 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.

Office of Environment and Heritage (2011) Plant Communities of the South Eastern Highlands and Australian Alps within the Murrumbidgee Catchment of New South Wales. Version 1.1. Technical Report. A Report to Catchment Action NSW. NSW Office of Environment and Heritage; Department of Premier and Cabinet, Queanbeyan.

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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