



Landscape— Steep to precipitous mountains on adamellite in the southern ACT. Slopes >30%, local relief ~600 m, elevation 640 - 1830 m. Large tors and cliff-forming rocky outcrops common on summits, and tors and large boulders prominent throughout. Uncleared open-forest (dry sclerophyll forest) with sub-alpine forest at altitudes >1500 m.

Soils— Variable, including shallow (<50 cm), well-drained Leptic, Bleached Leptic and Orthic Tenosols and Dermosols (Lithosols), shallow (<50 cm) to moderately deep (50 - 110 cm) Red, Brown and Yellow Chromosols (Red and Yellow Podzolic Soils) and Red and Yellow Kandosols (Red and Yellow Earths), and shallow to moderately deep (<100 cm), poorly drained Hydrosols (Humic Gleys), Organosols (Acid and Neutral Peats) and Kandosols (Sands and Earths).

Qualities and limitations— widespread shallow soils, localised complex soils, localised poor moisture availability, widespread non-cohesive soils, localised periodically frozen soils, localised soil fire hazard, widespread steep slopes, widespread rock outcrop hazard, widespread rockfall hazard, localised mass movement hazard, localised foundation hazard, widespread recharge zone, localised discharge zone, localised wind erosion hazard, localised gully erosion hazard, localised sheet erosion hazard, localised high run-on, localised poor drainage, localised permanently high watertables, localised permanent waterlogging, localised seasonal waterlogging.

LOCATION AND SIGNIFICANCE

Steep to precipitous mountains on adamellite covering much of the southern ACT. Almost entirely located within Namadgi National Park with only a very small area of lease hold land in the Booroomba valley included. Type location is between Orroral Valley and Honeysuckle creek along the Link Trail (MGA grid reference 678300E, 6065699N, grid zone 55).

Variants

None.

Included landscapes

None.

LANDSCAPE

Landform

Steep to precipitous mountains with slopes >30%, local relief of 400 - 700 m and elevation between 650 - 1820 m. Large tors and rocky outcrops occur on most of the crests, with smaller tors and large boulders occurring throughout the landscape. Major faulting and subsequent valley alignment has a NW-SE trend with subdominant lineation at roughly 90

degrees to the major trend. Large cliff-forming rocky crests are common, including Booroomba Rocks and Mount Namadji. Slopes are long (>300 m) and generally minimal or waning. Restricted drainage valleys and depressions following the structural trends are common. Swampy ground can be found at all elevations in the restricted drainage basins with organic rich shallow soils common in those locations.

Geology

Granitoids of the Shannons Flat Adamellite, Booroomba Leucogranite, Yaouk Leucogranite and Callemondah Granodiorite.

Source: DMR 2002.

Vegetation

Various forest and woodland communities. Common species include *Eucalyptus pauciflora* (snow gum), *E. rubida* (candlebark), *E. delegatensis* (alpine ash), *E. dalrympleana* (mountain gum) and *E. viminalis* (ribbon gum). Other less common species are *E. dives* (broad-leaved peppermint) and *E. nortonii* (Northons box).

Source: Office of Environment and Heritage (2011).

Land use

Contained entirely within the Namadji National Park.

Land degradation

Minimal land degradation associated with historical logging and grazing and disturbance by roads.

Erosion hazard

Land use	Non-concentrated flows	Concentrated flows	Wind
nature conservation	slight	slight	slight

SOILS

Soil variation and distribution

Generally, soils are shallow and sandy with large amounts of gravel, the most common of which are shallow (<50 cm), well-drained Leptic, Bleached Leptic and Orthic Tenosols (Lithosols). Most soils have a bleached A2 horizon common in Eucalypt forest areas of the region. On slopes where subsoils have developed are found shallow (<50 cm) to moderately deep (50 - 110 cm) Red, Brown and Yellow Chromosols (Red and Yellow Podzolic Soils) and Red and Yellow Kandosols (Red and Yellow Earths). Many of the lower valleys and drainage lines have soils that were clearly organic peats in the past but due to climate and drainage changes since the last glacial maximum have dried out and changed in character to duplex soils. Deep (< 100 cm) poorly drained Hydrosols (Humic Gleys) and Organosols (Acid and Neutral Peats) dominate, whilst where drainage is unrestricted better-drained Leptic Tenosols (Lithosols) and Kandosols (Sands and Earths) are found.

After the 2003 wild fires, a large amount of carbon was lost from the organic rich surface soil and severe sheet erosion occurred across much of the landscape. Organic material is slowly re-forming the A1 horizon returning the soils ability to retain moisture and ground cover for longer periods. Areas of restricted drainage can occur anywhere in the landscape including near crests and ridges and is related to local geological controls like jointing and faulting within the batholith. Due to the nature of steep granitic terrain the soils are highly variable over a small area with a general trend of more clays and greater depth at lower slope areas where groundwater plays a more important role in soil formation.

QUALITIES AND LIMITATIONS

Land capability

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

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

Landscape

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

Soils

Shallow soils	widespread	Complex soils	localised
Poor moisture availability	localised	Non-cohesive soils	widespread

Hydrology

High run-on	localised	Poor drainage	localised
Permanently high watertables	localised	Permanent waterlogging	localised
Seasonal waterlogging	localised	Flood hazard	not observed

Erosion

Wind erosion hazard	localised	Wave erosion hazard	not observed
Gully erosion hazard	localised	Sheet erosion hazard	localised
Streambank erosion hazard	not observed		

Salinity

Recharge zone	widespread	Discharge zone	localised
Salinity hazard	not observed	Seepage scalds	not observed
Salt stores	low		

FACETS

naq(1)— Crests and ridges and where bedrock is close to the surface

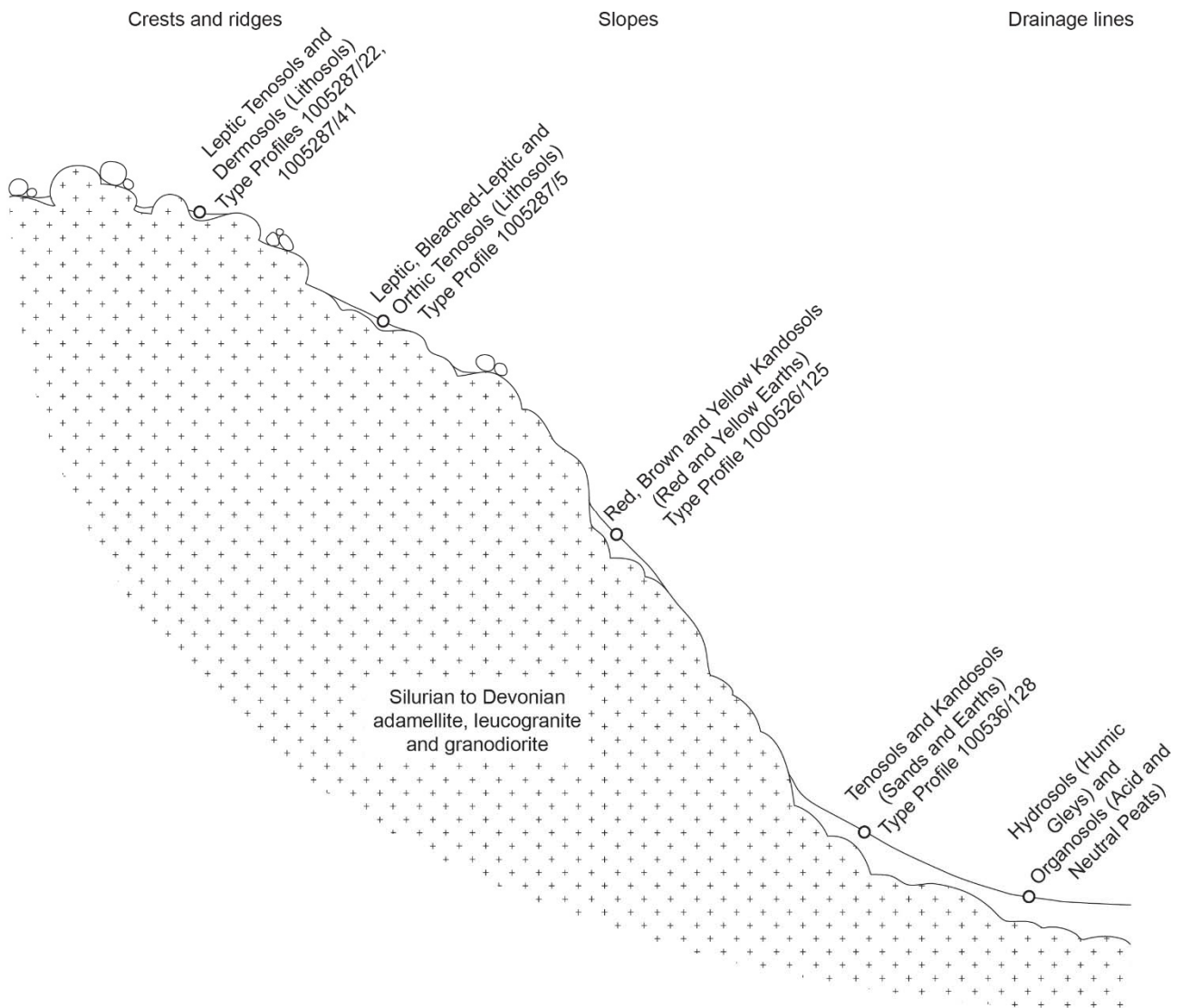
Soils	Shallow (<50 cm), well-drained Leptic Tenosols and Dermosols (Lithosols).
Type Profile(s)	Bleached-Leptic Tenosol (GSG not recorded): ACT Soil Landscapes (1005287) profile 41 (Master Type Profile) Brown Dermosol (GSG not recorded): ACT Soil Landscapes (1005287) profile 22 (Associated Type Profile)
HGL Reference	Typically corresponds with: HGL 16 (Namadgi) MA 1.

naq(2)— Slopes

Soils	Shallow (<50 cm), well-drained Leptic, Bleached-Leptic and Orthic Tenosols (Lithosols) are the most common. Where subsoils have developed can be found shallow (<50 cm) to moderately deep (50 - 110 cm) Red, Brown and Yellow Chromosols (Red and Yellow Podzolic Soils) and Red and Yellow Kandosols (Red and Yellow Earths).
Type Profile(s)	Yellow-Orthic Tenosol (GSG not recorded): ACT Soil Landscapes (1005287) profile 5 (Master Type Profile) Red Kandosol (Red Earth): PADDYS RIVER (1000536) profile 125 (Associated Type Profile) Red Chromosol (Red Podzolic Soil): PADDYS RIVER (1000536) profile 14 (Associated Type Profile)
HGL Reference	Typically corresponds with: HGL 16 (Namadgi) MA 2/3.

naq(3)— Drainage lines

Soils	Shallow to moderately deep (<50 - 150 cm), poorly drained Hydrosols (Humic Gleys) and Organosols (Acid and Neutral Peats) in areas of restricted drainage with Tenosols and Kandosols (Sands and Earths) in well-drained open-depressions.
Type Profile(s)	Grey Kandosol (Yellow Earth): PADDYS RIVER (1000536) profile 128 (Master Type Profile) Leptic Tenosol (Lithosol): ACT Soil Landscapes (1005287) profile 74 (Associated Type Profile)
HGL Reference	Typically corresponds with: HGL 16 (Namadgi) MA 2/3 AND ma 9/10.



Schematic cross-section of the Namadgi (naq) 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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