

pr

PULPIT ROCK

Erosional



Landscape—convex weathered rugged sandstone cliffs on Nowra Sandstone with talus slopes. Relief <80 m. Slopes >30%. Extensive caves and concave weathered pinnacles. Partially uncleared with low open-woodland.

Soils—soil is often discontinuous. Lithosols (Uc1.21) occur on crests, midslopes and lower slopes. Moderate to deep (100–>150 cm) Yellow Podzolic Soils (Dy2.31 and Dy3.11) occur on midslopes and lower slopes.

Limitations—steep slopes, mass movement hazard, rock fall hazard, rock outcrop, water erosion hazard, shallow soils, stoniness, hardsetting, and low available water-holding capacity.

LOCATION

Convex weathered sandstone cliffs and concave weathered pinnacles with talus slopes on sandstone on the Coastal Plain. Examples include Yalwal and Hanging Rock.

LANDSCAPE

Geology

Nowra Sandstone—medium- to coarse-grained quartzose sandstones containing rounded pebbles

of scattered quartz throughout the beds.

Topography

Convex weathered rugged sandstone cliffs with steep to very steep talus slopes. Relief <80 m. Slopes >30%. Crests are broad (500 m), slopes are steep with benches, drainage lines are narrow and incised. Extensive caves and concave weathered pinnacles associated with block gliding (Young 1983)—for example, Chimney Stack Rock near Yalwal. Scattered large rocks and boulders are common.

Vegetation

Uncleared low open-woodland. Common species include grey gum (*Eucalyptus punctata*), scribbly gum (*Eucalyptus haemostoma*), red bloodwood (*Eucalyptus gummifera*), blackbutt (*Eucalyptus pilularis*), sydney peppermint (*Eucalyptus piperita*), grey ironbark (*Eucalyptus paniculata*), hairpin banksia (*Banksia spinulosa*), black wattle (*Acacia mearnsii*), lillypilly (*Acmena smithii*), coastal tea-tree (*Leptospermum laevigatum*), dagger hakea (*Hakea teretifolia*), burrawang (*Macrozamia communis*), turpentine (*Syncarpia glomulifera*) and spotted gum (*Eucalyptus maculata*).

Land Use

Recreational areas, walking trails and undisturbed bushland.

Existing Erosion

Rock falls are common on scree slopes. There is evidence of minor rill erosion and moderate slumping on batters.

SOIL**Dominant Soil Materials****pr1—Hardsetting moderately pedal brown fine sandy loam (topsoil)**

Colour brown (10YR 4/4) to dull yellowish brown (10YR 4/3)

Texture fine sandy loam

Structure moderately pedal, 50–100 mm polyhedral to sub-angular blocky peds

Fabric rough-faced, porous

pH 5.0

Stones 20–50% 60–200 mm angular, dispersed

Roots common, in-ped

pr2—Loose brownish grey sand (topsoil)

Colour brownish grey (5YR 4/1)

Texture sand to loamy sand

Structure apedal single-grained

Fabric sandy

pH 5.0

Stones 2–10% 2–6 mm rounded, dispersed

Roots common

pr3—Bright brown strongly pedal medium clay (subsoil)

Colour bright brown (7.5YR 5/8)

Texture sandy clay

Structure strongly pedal, 10–20 mm angular blocky peds

Fabric rough-faced, porous

pH 4.5

Stones 20–50% 20–60 mm rounded, dispersed

Roots nil

pr4—Mottled bright brown massive medium clay (subsoil)

Colour bright brown (7.5YR 5/8) with yellow and grey mottles (50%)

Texture medium clay

Structure apedal massive

Fabric dense

pH 3.5

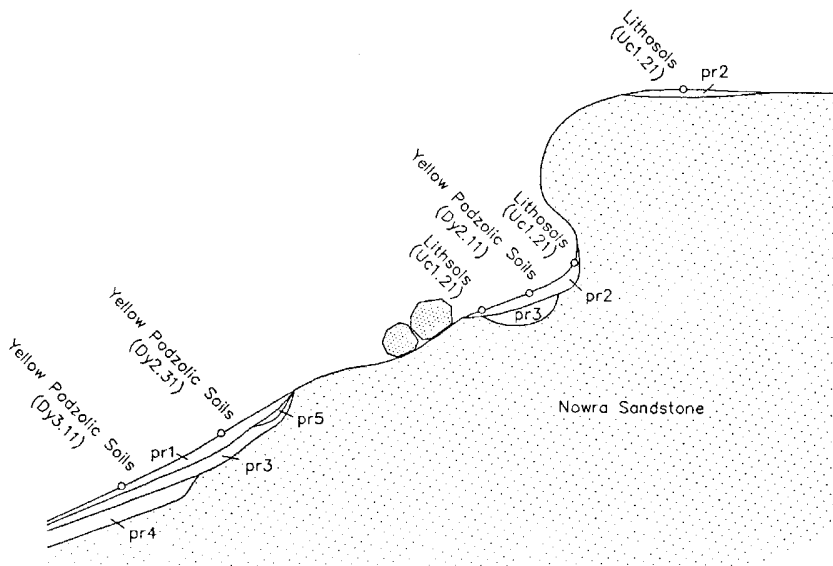
Stones nil

Roots nil

pr5—Bright yellowish brown sandy clay loam (subsoil)

Colour bright yellowish brown (10YR 5/3) with sporadic bleach

Texture sandy clay loam



■ Schematic cross-section of Pulpit Rock soil landscape illustrating the occurrence and relationship of the dominant soil materials.

Structure	apedal massive to weakly pedal, 10–20 mm polyhedral peds
Fabric	earthy to rough-faced, porous
pH	5.0
Stones	nil
Roots	few, ex-ped

Occurrence and Relationships

Soils are often shallow and discontinuous.

Crests. Up to 20 cm of loose brownish grey sand (**pr2**) overlies bedrock [Lithosols (Uc1.21)].

Midslopes. Up to 15 cm **pr2** overlies bedrock [Lithosols (Uc1.21)]. Otherwise, <15 cm **pr2** overlies <50 cm bright brown strongly pedal medium clay (**pr3**). Boundary is sharp [Yellow Podzolic Soils (Dy2.11)]. Total depth is >100 cm.

Lower Slopes. Up to 20 cm fine sandy loam (**pr1**) overlies <20 cm bright yellowish brown sandy clay loam (**pr5**) which overlies <70 cm **pr3**. Boundaries are sharp to clear [Yellow Podzolic Soils (Dy2.31)]. Total depth is <150 cm. Up to 20 cm of **pr1** overlies <70 cm **pr3**. Up to 40 cm mottled bright massive medium clay (**pr4**) is overlain by <70 cm **pr3**. Boundaries are sharp to clear [Yellow Podzolic Soils (Dy3.11)]. Total depth is <250 cm. Occasionally <20 cm of loose brownish grey sand (**pr2**) overlies bedrock [Lithosols (Uc1.21)].

LIMITATIONS TO DEVELOPMENT

Soil Limitations

- pr1** Hardsetting
Stoniness
Low available water-holding capacity
- pr2** Stoniness
Sodicity
High permeability
Very low available water-holding capacity
High aluminium toxicity
- pr3** Stoniness
Very low organic matter
Low fertility
Low available water-holding capacity
High aluminium toxicity

- pr4** Strongly acid
High permeability
Low available water-holding capacity
- pr5** Low permeability
Low wet bearing strength
Low fertility
Low available water-holding capacity

Fertility

General fertility is low. The topsoil (**pr1**) is hardsetting. The subsoils are often shallow and stony, strongly to moderately acid with a low CEC.

Erodibility

All the soil materials have very low erodibility ratings.

Erosion Hazard

Erosion hazard for non-concentrated flows is extreme. The calculated soil loss for the first 12 months of urban development ranges up to 500 t/ha for topsoils and 750 t/ha for exposed subsoils. The erosion hazard for concentrated flows is low to moderate.

Surface Movement Potential

These soil materials are generally stable.

Landscape Limitations

- Steep slopes
- Mass movement hazard
- Rock fall hazard
- Shallow soil
- Rock outcrop
- Water erosion hazard

Urban Capability

Generally high to severe limitations for urban development.

Rural Capability

Generally high to severe limitations for regular cultivation and grazing.