

RED Redhill Land System

Discontinuous range of low hills and rises extending from south of Redhill to Nurom

Area: 55.3 km²

Annual rainfall 375 - 425 mm average

Geology: Quartzites and quartzitic sandstones of the Tent Hill Formation, generally capped by soft to hard secondary carbonate. Fine grained local outwash sediments flank the quartzite.

Topography: This land system is a range of hills parallel to the Barunga Range, but of much lower altitude, which has been largely buried by alluvial sediments. Only the upper slopes remain above the surrounding plains, so the range now appears as a chain of isolated rises and low hills varying in height from 10 - 105 m. Slopes range from 5 - 30%. There are areas of rocky outcrop on the steeper land. Flanking the rises and low hills are gently inclined outwash fans formed on locally derived outwash sediments. These have slopes ranging from 2 - 10%.

Elevation: 50 m where Crystal Brook flows around the northern end of the range, to 205 m at its highest point.

Relief: The lowest rise is 10 m above the surrounding plain; the highest point is 105 m above the plain.

Soils: Gradational loamy soils with red clayey subsoils are extensive, both moderately shallow on weathering rock and deep over alluvium. Subdominant soils include shallow and deep calcareous loams, and loam over red clay texture contrast soils.

Main soils: *Soils formed over basement rock on rises*

C2 Gradational loam on rock

D1 Loam over red clay on rock

Soils formed over alluvium on outwash fans

A6 Calcareous loam

C3 Gradational clay loam

Minor soils: *Soils formed over basement rock on rises*

A2 Shallow calcareous loam

B3 Shallow stony loam on calcrete

L1 Shallow stony loam on rock

Soils formed over alluvium on outwash fans

C1 Gradational loam over rubble

D2 Loam over well structured red clay

Main features: The Redhill Land System is characterized by semi arable rises and low hills, flanked by gentle slopes. Shallow loamy soils are predominant on the rising ground, which has the potential to generate substantial runoff on to lower slopes. The lower slopes have deeper, fertile soils. They are potentially highly productive provided that runoff and erosion are controlled. The main soil limitation is surface hard setting, which contributes to erosion potential. This problem can be at least partially overcome through modifications to surface management practices and use of gypsum.



Soil Landscape Unit summary: 6 Soil Landscape Units (SLUs) mapped in the Redhill Land System

SLU	% of area	Main features #
ATC	10.5	Moderately inclined slopes of 15-30% and relief to 60 m formed on quartzites. There is up to 20% surface quartzite, sandstone and calcrete. Main soils: <u>shallow calcareous loam</u> - A2 (E) and <u>loam over red clay on rock</u> - D1 (E), with <u>shallow stony loam on calcrete</u> - B3 (L), <u>gradational loam on rock</u> - C2 (L) and <u>shallow stony loam on rock</u> - L1 (L). This land is all non arable due to moderately steep slopes, erosion potential and rockiness. The soils are generally shallow, stony and prone to spring moisture deficit.
EBC EBD	47.4 8.8	Rises and low hills formed on quartzites. EBC Rises with slopes of 4-12%, relief to 30 m and up to 10% surface quartzite, sandstone and calcrete. EBD Low hills with slopes of 10-20% and relief to 50 m with 10-20% surface quartzite, sandstone and calcrete, and up to 10% rock outcrop. Main soils: <u>gradational loam on rock</u> - C2 (E), with <u>loam over red clay on rock</u> - D1 (C), <u>gradational loam over rubble</u> - C1 (C), <u>shallow calcareous loam</u> - A2 (C) and <u>shallow stony loam on calcrete</u> - B3 (C). Although the soils are stony and often shallow this land is mostly arable (there are some rocky reefs in EBD). All areas are sloping and therefore susceptible to erosion.
KAA KAB KAC	0.4 25.6 7.3	Outwash fans and flats formed on fine grained alluvium capped by secondary carbonates. KAA Flats with slopes of less than 2%. KAB Fans with slopes of 2-4% and up to 10% surface quartzite stones. KAC Fans with slopes of 4-12% and up to 20% surface quartzite stones. Main soils: <u>calcareous loam</u> - A6 (E) and <u>gradational clay loam</u> - C3 (E), with <u>loam over well structured red clay</u> - D2 (C). This land has generally good agricultural potential. Erosion control measures are required over much of the area, and implement abrasion by the locally extensive quartzite stone cover is significant.

PROPORTION codes assigned to soils within Soil Landscape Units (SLU):

- (D) Dominant in extent (>90% of SLU)
- (V) Very extensive in extent (60–90% of SLU)
- (E) Extensive in extent (30–60% of SLU)
- (C) Common in extent (20–30% of SLU)
- (L) Limited in extent (10–20% of SLU)
- (M) Minor in extent (<10% of SLU)

Detailed soil profile descriptions:

- A2** Shallow calcareous loam (Paralithic / Lithic, Lithocalcic / Supracalcic Calcarosol)
Calcareous gravelly sandy loam to clay loam overlying rubbly carbonate within 50 cm and grading to weathering quartzite within 100 cm.
- A6** Calcareous loam (Pedal, Calcic Calcarosol)
Calcareous fine sandy loam to clay loam, grading to a well structured red brown very highly calcareous clay loam to clay over soft Class I carbonate at about 55 cm, overlying clayey alluvium.
- B3** Shallow stony loam on calcrete (Petrocalcic, Leptic Tenosol)
Medium thickness loam to clay loam overlying sheet or rubbly calcrete at shallow depth.
- C1** Gradational loam over rubble (Supracalcic, Red Kandosol)
Medium to thick loam grading to a weakly structured clay loam over soft to rubbly carbonate within 50 cm.
- C2** Gradational loam on rock (Calcic / Hypercalcic, Red Dermosol)
Medium thickness sandy loam to clay loam grading to a red well structured stony clay over soft carbonate within 50 cm and weathering rock within 100 cm.



- C3** Gradational clay loam (Hypercalcic, Red Dermosol)
Medium thickness loam to clay loam grading to a well structured clay with abundant soft Class I carbonate from about 50 cm, over clayey alluvium.
- D1** Loam over red clay on rock (Calcic / Hypercalcic, Red Chromosol)
Medium thickness sandy loam to clay loam abruptly overlying a red well structured stony clay over soft carbonate within 50 cm and weathering rock within 100 cm.
- D2** Loam over well structured red clay (Hypercalcic / Calcic, Red Chromosol)
Medium thickness sandy loam to clay loam overlying a well structured clay with abundant soft Class I carbonate from about 50 cm, over clayey alluvium.
- L1** Shallow stony loam on rock (Lithic, Leptic Rudosol)
Stony sandy loam to clay loam over quartzite at shallow depth.

Further information: [DEWNR Soil and Land Program](#)

