

COA Coola Land System

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| Area: | 117.7 km ² |
| Landscape: | Plain southwest of Mt. Gambier with very shallow soils containing rounded flint or chert gravel over calcreted Miocene limestone. |
| Annual rainfall: | 750 – 770 mm average |
| Geology: | Eocene-Miocene Gambier Limestone; fossiliferous marine limestone. |
| Main soils: | B7 (45%) Shallow sand over clay on calcrete (sandy Petrocalcic Sodosol-Chromosol) |
| Minor soils: | <p>G3 16%) Thick sand over clay (sandy Brown-Red Chromosol-Sodosol) F1 (15%) Loam over brown or dark clay (Brown-Dark Chromosol-Sodosol) RR (11%) Rock or exposed calcrete. <i>Other soils making up 10%, but only 2-3% each</i> F2 Sandy loam over poorly structured brown or dark clay (Brown-Dark Sodosol-Chromosol) B3 Shallow sandy loam on calcrete (Petrocalcic Red Tenosol-Kandosol-Rudosol) B2 Shallow calcareous loam on calcrete (Petrocalcic Calcarosol-Rudosol) B5 Shallow dark clay loam on limestone (Petrocalcic Black-Grey Dermosol)</p> |
| Summary: | The flinty nature of the soils on this plain makes them effectively non-arable. The land is used for grazing and forestry. |

Soil Landscape Unit summary: Coola Land System (COA)

| SLU | % of area | Component | Main soils | Prop# | Notes |
|------|-----------|------------|------------|-------|---|
| m-AF | 0.4 | Plain | B3 | D | Very shallow flinty loam on red-brown clay loam over calcrete capped Miocene limestone. Main soils: <u>Shallow sandy loam on calcrete - B3.</u> |
| mTAF | 78.2 | Plain | B7 | D | Plains with flinty loam over poorly structured brown clay over Miocene limestone. Shallow flinty red/brown loamy soil on rises. Main soils: Plains and rises: <u>Sand over friable brown clay on calcrete - B7.</u> |
| | | Rise | B7 | M | |
| mUA | 1.8 | Plain | B3 | D | mUA Plain with very dark brown sandy loam on brown sandy clay loam over Miocene limestone. mUBF Plains and rises as above. mUEK As above depression with sinkholes/karst features. Main soils: Plains: <u>Shallow sandy loam on calcrete - B3, Sandy loam over poorly structured brown or dark clay - F2 and Loam over brown or dark clay - F1.</u> Rises: <u>Loam over brown or dark clay - F1.</u> Depressions: <u>Shallow sandy loam on calcrete - B3.</u> |
| mUBF | 3.4 | Plain | F2F1 | E | |
| | | Rise | F1 | E | |
| mUEK | 0.7 | Depression | B3 | D | |
| mWAF | 5.7 | Plain | RRF2 | V | mWAF Plains with flinty loam over poorly structured brown clay. mWB Gently undulating plains with loam over poorly structured brown clay, <10% sand rises. mWBF as above with flinty soils. Main soils: Plains: <u>Rock or exposed calcrete – RR, Sandy loam over</u> |
| | | Sand Rise | I2H3 G2 | L | |
| mWB | 0.4 | Plain | B7F2 | D | |
| | | Sand Rise | G3 | M | |
| mWBF | 1.8 | Plain | B7F2 | D | |
| | | Sand Rise | G3 | M | |



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|------|-----|------------|----------|---|---|
| | | | | | <u>poorly structured brown or dark clay - F2 and Sand over friable brown clay on calcrete - B7.</u> Sandy rises: <u>Wet highly leached sand - I2, Thick sand over clay - G3, Bleached sand over sandy clay loam - G2 and Bleached siliceous sand - H3.</u> |
| NBA | 0.3 | Plain | B2 | D | Plain with shallow mostly calcareous cracking clay on calcrete. Main soils: <u>Shallow calcareous loam on calcrete - B2.</u> |
| NJA | 0.3 | Plain | B5A7 | D | Inter-dune corridor plain with deep dark clay soils on calcreted marl or limestone often calcareous throughout. Main soils: Plains: <u>Shallow dark clay loam on limestone - B5, Calcareous clay loam on marl - A7.</u> Swamps: <u>Wet clay loam - N3 and Peaty soil - N1.</u> |
| | | Swamp | N3N1 | M | |
| NKM | 4.4 | Plain | B2 | V | Inter-dune corridor plains with deeper, dark, mostly calcareous clay soils over marl or calcareous clayey sediments. 20-30% shallow clays over calcrete on rises. Main soils: Plains: <u>Shallow calcareous loam on calcrete - B2.</u> Stony rises: <u>Shallow dark clay loam on limestone - B5 and Shallow calcareous loam on calcrete - B2.</u> |
| | | Stony rise | B5B2 | C | |
| NnF | 0.8 | Plain | C5 M2 | V | Plain with shallow, dark clays over calcrete. Sand over poorly structured clay occurs on rises which occupy 20-30% of the area. 10% swamps. Main soils: Plains: <u>Gradational dark clay loam - C5 and Deep friable gradational clay loam - M2.</u> Sandy rises: <u>Thick sand over clay - G3 and Sand over yellow and brown clay - G4.</u> Swamps: <u>Wet clay loam - N3 and Peaty soil - N1.</u> |
| | | Sandy rise | G3 G4 | C | |
| | | Swamp | N3N1 | M | |
| NYE | 0.2 | Plain | M2 | D | NYE Swampy plain with shallow dark cracking clay soils on calcreted marl or limestone. 0-10% rises. NYEF as above, with flinty soils. 10-20% rises. Main soils: Plains: <u>Deep friable gradational clay loam - M2.</u> Rises: <u>Sand over friable brown clay on calcrete - B7.</u> |
| NYEF | 0.5 | Plain | M2 | V | |
| | | Rise | B7 | L | |
| Xtf | 1.0 | Swamp | B5N3 | V | Peaty swamps with stony rises or shallow over calcrete. Main soils: Swamps: <u>Shallow dark clay loam on limestone - B5 and Wet clay loam - N3.</u> Rises: <u>Shallow calcareous loam on calcrete - B2 and Shallow sandy loam on calcrete - B3.</u> |
| | | Rise | B2B3 | C | |

PROPORTION codes assigned to Soil Landscape Unit (SLU) components:

- 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:

- A7** Calcareous clay loam on marl (Marly Calcarosol)
Dark calcareous clay with a marly subsoil (often saline in Upper SE). Often with shells and a peaty surface.
- B2** Shallow calcareous sandy loam on calcrete (Petrocalcic Calcarosol)
Up to 40 cm calcareous loamy sand to sandy loam with variable calcrete rubble overlying calcreted calcarenite - rises.



- B3** Shallow sandy loam on calcrete (Petrocalcic Rudosol)
Medium thickness non calcareous sandy loam, often having a slight clay increase with depth, over calcreted calcarenite shallower than 50 cm - rises.
- B5** Shallow dark clay loam on limestone (Petrocalcic, Black Dermosol)
Black clay loam to light clay over calcreted limestone at shallow depth, grading to highly calcareous clay - flats.
- B7** Shallow sand over sandy clay on calcrete (Petrocalcic, Brown Chromosol)
Medium thickness sand overlying brown friable sandy clay to clay on limestone or calcreted sandy clay within 50 cm - flats.
- C5** Gradational dark clay loam (Calcic-Hypercalcic Brown-Grey-Black Dermosol-Calcarosol)
Dark clay loam over abundant 'soft lime'. >10% carbonate is the cut off between this and M2 soils.
- F1** Loam over brown or dark clay (Brown-Dark Chromosol-Sodosol)
Topsoil >30 cm over a poorly structured subsoil, or else, subsoil structure is good. Loamy to clay loamy texture contrast soil with brown clayey subsoil. Loamy, reasonable depth A, and OK structured clay subsoil.
- F2** Sandy loam over poorly structured brown or dark clay (Brown-Dark Sodosol-Chromosol)
Topsoil <30 cm over a poorly structured subsoil. Loamy, often sandy loam, to clay loamy texture contrast soil with a sodic/dispersive/poorly structured brown clayey subsoil. Often sandy loam, usually with a bleached horizon, and thin topsoil over a poorly structured B.
- G2** Bleached sand over sandy clay loam (sandy Brown-Red Chromosol)
Sandy texture contrast soil with a bleached A2 and a friable brown-red sandy clay loam to sandy loam subsoil.
- G3** Thick sand over clay (Hypercalcic, Brown Sodosol/ Chromosol)
Thick bleached sand with an organically darkened surface abruptly overlying a massive to coarsely structured brown to reddish yellow sandy clay to clay, calcareous with depth - rises.
- G4** Sand over poorly structured clay (Sandy Brown-Red Sodosol-Chromosol)
Topsoil <30 cm over a poorly structured subsoil. Thin sandy texture contrast soil with a sodic /dispersive /poorly structured brown or red clayey subsoil. Can have some ironstone.
- H3** Deep bleached sand (Basic, Arenic, Bleached-Orthic Tenosol)
Grey sand over a very thick bleached sand grading to yellow sand continuing below 100 cm.
- I2** Wet highly leached sand (Fragic, Humic, Aquic Podosol)
Grey sand with a thick bleached A2 horizon, overlying a thin to thick layer of coffee rock, grading to pale brown sand sharply overlying a grey, brown and yellow mottled sandy clay loam to light clay.
- M2** Deep friable gradational clay loam (Red-Brown-Grey- Black Dermosol)
- N1** Peat (Organosol)
Peaty soil
- N3** Seasonally waterlogged, non to marginally saline equivalents of soils listed above, viz.:
N3c Wet **G3**
N3d Wet **B5**
N3e Wet **B7**
- RR** Bare rock

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

