

TAT Tartwaup Land System

Area: 71 km²

Landscape: Gently undulating plains with low rises on calcarenite. Mostly shallow soils with some volcanic ash influence in surface horizons in the south east where it adjoins the Gambier land system.

Annual rainfall: 700 - 850 mm average

Geology: Eocene-Miocene Gambier Limestone; fossiliferous marine limestone on plains. Calcreted aeolianite of the Pleistocene Bridgewater Formation barrier shoreline deposits on rises.

Main soils: **B6** (33%) Shallow loam over red-brown clay on calcrete (Petrocalcic Red Chromosol-Kandosol)
B3 (20%) Shallow sandy loam on calcrete (Petrocalcic Red Tenosol-Kandosol-Rudosol)

Minor soils: **H3** (8%) Bleached siliceous sand (sandy Bleached Tenosol)
O1 (8%) Volcanic soil (Andic Tenosol)
G3 (5%) Thick sand over clay (sandy Brown-Red Chromosol-Sodosol)

Summary: Whilst soils are relatively shallow, they are usually well drained and relatively fertile. The main limitations for plant growth are limited root depth and hence low waterholding capacity.

Soil Landscape Unit summary: Tartwaup Land System (TAT)

SLU	% of area	Component	Main soils	Prop#	Notes
MBB	0.5	Rise	B3B7	V	Gently sloping rises with sandy loam grading to red sandy clay loam on calcreted calcarenite. Sand is often bleached over poorly structured clay. 10-30% thin sand over calcarenite. Main soils: Plains: <u>Shallow sandy loam on calcrete - B3</u> and <u>Sand over friable brown clay on calcrete - B7</u> . Swales: <u>Shallow sandy loam on calcrete - B3</u> .
		Swale	B3	L	
MCKK	7.4	Rise	B3B6	V	Broad rises, often with deep almost linear karst depressions. Soils are mostly shallow sandy loam often with thin red clay on calcreted calcarenite. 10-20% deep siliceous sand on dunes. <10% swamps. Main soils: Rises: <u>Shallow sandy loam on calcrete - B3</u> and <u>Shallow sandy loam over red-brown clay on calcrete - B6</u> . Dunes: <u>Highly leached sand - I1</u> , <u>Wet highly leached sand - I2</u> and <u>Bleached siliceous sand - H3</u> . Swamps: <u>Peaty soil - N1</u> and <u>Wet clay loam - N3</u> .
		Dune	I1I2H3	L	
		Swamp	N1N3	M	



MMB	6.1	Rise	B7G3	V	Gently sloping dune range with moderately deep siliceous sands over calcarenite often with grey or brown poorly structured clay. 10-30% deep sands. 10-30% shallow loamy sand over red clay on calcarenite. Main soils: Rises and plains: <u>Sand over friable brown clay on calcrete - B7</u> and <u>Thick sand over clay - G3</u> .
		Plain	B7G3	L	
MNC	9.2	Dune	H2B6	V	Undulating rises with shallow sand over calcreted calcarenite, 20-30% deep siliceous sand on dunes, <10% swales with sandy loam/loam over red clay on calcreted calcarenite. Main soils: Dunes: <u>Deep brown sand - H2</u> and <u>Shallow sandy loam over red-brown clay on calcrete - B6</u> . Rises: <u>Shallow sandy loam over red-brown clay on calcrete - B6</u> and <u>Bleached sand over sandy clay loam - G2</u> .
		Rise	B6G2	L	
MOA	6.2	Plain	B6	D	MOA Plains with shallow sandy loam (sometimes ironstone gravelly) over red-brown sandy clay loam or clay on calcreted calcarenite. <10% deep, leached sands. MOB As above gently undulating rises. Main soils: Plains and rises: <u>Shallow sandy loam over red-brown clay on calcrete - B6</u> . Dunes: <u>Highly leached sand - I1</u> and <u>Bleached siliceous sand - H3</u> .
MOB	26.9	Rise	B6	D	
		Dune	I1H3	M	
MRA	6.8	Plain	B6	D	MRA Plain with shallow red and brown sandy clay loam over red clay soils, 10-30% deep leached sand or sand over clay rises. 10-30% flats with deep, dark clay loamy soils (M2). MRB Gently undulating calcreted former beach ridge with very shallow red and brown loam/red clay soils, < 10% deep leached sand or sand/clay rises. Main soils: <u>Shallow sandy loam over red-brown clay on calcrete - B6</u> .
MRB	2.0	Plain	B6	D	
NKM	0.5	Plain	A6	D	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: <u>Gradational calcareous clay - A6</u> .
OHD	5.2	Dune	I1H3	D	Deep moderately to highly leached siliceous sands on low dunes, <10% shallow loamy sand, often over red-brown sandy clay loam/clay on calcreted calcarenite. Main soils: Dunes: <u>Highly leached sand - I1</u> and <u>Bleached siliceous sand - H3</u> . Stony rises: <u>Shallow sandy loam on calcrete - B3</u> .
		Rise	B3	M	
OMD	1.5	Dune	I1G3	D	Low dunes with moderately deep to shallow, bleached acid to neutral sand over calcarenite but also with shallow bleached sands over calcarenite and sand over poorly structured clay in swales. Main soils: <u>Highly leached sand - I1</u> and <u>Thick sand over clay - G3</u> .



OND	0.3	Dune	H3	V	Low dunes with deep neutral to acid sands on dunes with 20-30% shallow sandy loam over red-brown clay loam/clay on calcarenite. Main soils: Dunes: <u>Bleached siliceous sand</u> - H3 . Rises: <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6 and <u>Bleached siliceous sand</u> - H3 .
		Rise	B6H3	C	
vDA	1.0	Plain	G2O1	D	Plain with deep dark loamy sand to clay loam over red-brown clay formed in weathered quartz-rich ash, dark organic loam over dark brown clay, especially in the lower parts of the landscape. Main soils: <u>Bleached sand over sandy clay loam</u> - G2 and <u>Volcanic ash soil</u> - O1 .
vEC	14.3	Dune	I1O1 H3	V	Deep siliceous sandy soils with surface deposits of volcanic ash. Main soils: Dunes: <u>Highly leached sand</u> - I1 , <u>Volcanic ash soil</u> - O1 and <u>Bleached siliceous sand</u> - H3 . Rises: <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6 and <u>Volcanic ash soil</u> - O1 .
		Rise	B6O1	L	
vFC	2.2	Rise	O1B3	V	Landscapes with surface deposits of volcanic ash on calcarenite often with deep sandy soils. Undulating rises with shallow volcanic loams often over red clay on calcrete. Minor low sand dunes with deep sands. Minor clay loamy soils in swales. Main soils: Rises: <u>Volcanic ash soil</u> - O1 and <u>Shallow sandy loam on calcrete</u> - B3 . Dunes: <u>Volcanic ash soil</u> - O1 , <u>Highly leached sand</u> - I1 and <u>Bleached siliceous sand</u> - H3 . Swales: <u>Volcanic ash soil</u> - O1 , <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6 and <u>Shallow red loam on limestone</u> - B4 .
		Dune	O1I1 H3	L	
		Swale	O1B6 B4	M	
vGA	0.8	Plain	G2	D	Shallow sandy loam on red clay over calcarenite overlain with volcanic ash. vGA Plains with often thick, dark volcanic loam over red & brown clay subsoils. vGB Gently undulating plains and rises as above. Loamy sand over poorly structured clay also occurs on rises. Main soils: Plains: <u>Bleached sand over sandy clay loam</u> - G2 , <u>Volcanic ash soil</u> - O1 and <u>Thick sand over clay</u> - G3 . Rises: <u>Thick sand over clay</u> - G3 , <u>Volcanic ash soil</u> - O1 and <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6 .
vGB	2.2	Rise	G3O1 B6	V	
		Plain	O1G3	L	
vHA	6.8	Plain	B3	V	Mostly shallow low stony ranges, with sandy loam over red clay soils on calcrete. Volcanic ash in surface only. Rock outcrop common on ranges. Former beach ridge. vHA plain with <10% rises. Main soils: Plains and rises: <u>Volcanic ash soil</u> - O1 and <u>Shallow sandy loam on calcrete</u> - B3 .
		Rise	B3	L	

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

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



Detailed soil profile descriptions:

- A6** Gradational calcareous clay loam (Pedal Hypercalcic-Lithocalcic Calcarosol on clayey subsoil)
Calcareous loams to clay loams grading into brown-red clay. Often rubbly.
- 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.
- B4** Red sandy loam over calcrete (Petrocalcic, Red Dermosol)
Medium thickness red sandy loam grading to friable red clay loam over calcreted calcarenite within 50 cm - rises.
- B6** Shallow sandy loam over red-brown clay on calcrete (Petrocalcic, Red Kandosol)
Medium thickness sandy loam with slight ironstone gravel overlying a weakly structured reddish brown sandy clay on calcarenite within 50 cm - rises.
- 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.
- 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.
- H2** Siliceous sand (Sandy Calcarosol-Tenosol)
Deep to moderate depth calcareous siliceous sand. Often with non-calcareous topsoil; can be non calcareous throughout. Sometimes the subsoil is a light sandy loam.
- 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.
- I1** Highly leached sand (Fragic, Pipey, Aeric Podosol)
Grey sand with a very thick bleached A2 layer, over dark brown and yellow massive soft to semi-hard clayey sand (coffee rock), grading to softer yellow and brown sand to sandy clay loam from about 80 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.
- 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**
- O1** Volcanic ash soil (Mostly Podosols and Tenosols)
Deep volcanic ash soils and soils overlain with volcanic ash.

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

