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

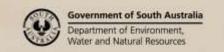
capacity.

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



MMB	6.1	Rise	B7G3	V	Gently sloping dune range with moderately deep siliceous
MINIB	6.1	Plain	B7G3	L	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: Sand over friable brown clay on calcrete - B7 and Thick sand over clay - G3.
MNC	9.2	Dune	H2B6	V	Undulating rises with shallow sand over calcreted calcarenite,
		Rise	B6G2	L	20-30% deep siliceous sand on dunes, <10% swales with sandy loam/loam over red clay on calcreted calcarenite.
					Main soils: Dunes: Deep brown sand - H2 and Shallow sandy loam over red-brown clay on calcrete - B6. Rises: Shallow sandy loam over red-brown clay on calcrete - B6 and Bleached sand over sandy clay loam - G2.
MOA	6.2	Plain	B6	D	MOA Plains with shallow sandy loam (sometimes ironstone
MOB	26.9	Rise	В6	D	gravelly) over red-brown sandy clay loam or clay on calcreted
		Dune	I1H3	М	calcarenite. <10% deep, leached sands. MOB As above gently undulating rises.
					Main soils: Plains and rises: Shallow sandy loam over red-brown clay on calcrete - B6. Dunes: Highly leached sand - I1 and Bleached siliceous sand - H3.
MRA	6.8	Plain	В6	D	MRA Plain with shallow red and brown sandy clay loam over
MRB	2.0	Plain	В6	D	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</u> - B6 .
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</u> - A6 .
OHD	5.2	Dune	I1H3	D	Deep moderately to highly leached siliceous sands on low
		Rise	B3	M	dunes, <10% shallow loamy sand, often over red-brown sandy clay loam/clay on calcreted calcarenite.
					Main soils: Dunes: Highly leached sand - I1 and Bleached siliceous sand - H3. Stony rises: Shallow sandy loam on calcrete - B3.
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: Highly leached sand - I1 and Thick sand over clay -
					G3.





OND	0.3	Dune	H3	V	Low dunes with deep neutral to acid sands on dunes with 20-
OND	0.5	Rise	B6H3	C	30% shallow sandy loam over red-brown clay loam/clay on
		Tuse	Donis		calcarenite.
					Main soils:
					Dunes: Bleached siliceous sand - H3.
					Rises: Shallow sandy loam over red-brown clay on calcrete - B6
					and Bleached siliceous sand - H3 .
vDA	1.0	Plain	G2O1	D	Plain with deep dark loamy sand to clay loam over red-brown
VDII	1.0	T Idiii	3201		clay formed in weathered quartz-rich ash, dark organic loam
					over dark brown clay, especially in the lower parts of the
					landscape.
					Main soils:
					Bleached sand over sandy clay loam - G2 and Volcanic ash soil
					- O1.
vEC	14.3	Dune	I101	V	Deep siliceous sandy soils with surface deposits of volcanic ash.
		ъ.	H3	1.	Main soils:
		Rise	B6O1	L	Dunes: Highly leached sand - I1, Volcanic ash soil - O1 and
					Bleached siliceous sand - H3 .
					Rises: Shallow sandy loam over red-brown clay on calcrete - B6 and Volcanic ash soil - O1.
vFC	2.2	Rise	O1B3	V	Landscapes with surface deposits of volcanic ash on calcarenite
		Dune	O1I1	L	often with deep sandy soils. Undulating rises with shallow
			H3		volcanic loams often over red clay on calcrete. Minor low sand
		Swale	O1B6	М	dunes with deep sands. Minor clay loamy soils in swales.
			B4		Main soils:
					Rises: Volcanic ash soil - O1 and Shallow sandy loam on
					calcrete - B3.
					Dunes: Volcanic ash soil - O1, Highly leached sand - I1 and
					Bleached siliceous sand - H3 .
					Swales: Volcanic ash soil - O1, Shallow sandy loam over red-
					brown clay on calcrete- B6 and Shallow red loam on limestone - B4 .
vGA	0.8	Plain	G2	D	Shallow sandy loam on red clay over calcarenite overlain with
vGB	2.2	Rise	G3O1	V	volcanic ash.
, 02			B6	-	vGA Plains with often thick, dark volcanic loam over red &
		Plain	O1G3	L	brown clay subsoils.
					vGB Gently undulating plains and rises as above. Loamy sand
					over poorly structured clay also occurs on rises.
					Main soils:
					Plains: Bleached sand over sandy clay loam - G2, Volcanic ash
					soil - 01 and Thick sand over clay - G3 .
					Rises: Thick sand over clay - G3, Volcanic ash soil - O1 and
					Shallow sandy loam over red-brown clay on calcrete- B6 .
vHA	6.8	Plain	В3	V	Mostly shallow low stony ranges, with sandy loam over red clay
		Rise	В3	L	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: Volcanic ash soil - O1 and Shallow sandy
					loam on calcrete - B3.

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

D Dominant in extent (>90% of SLU)

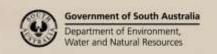
V Very extensive in extent (60–90% of SLU)

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:

- A6 <u>Gradational calcareous clay loam (Pedal Hypercalcic-Lithocalcic Calcarosol</u> 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.
- 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.
- 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.
- 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 <u>Bleached sand over sandy clay loam (sandy Brown-Red Chromosol)</u>
 Sandy texture contrast soil with a bleached A2 and a friable brown-red sandy clay loam to sandy loam subsoil.
- 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.
- 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.
- 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 G3N3d Wet B5N3e Wet B7
- Volcanic ash soil (Mostly Podosols and Tenosols)

 Deep volcanic ash soils and soils overlain with volcanic ash.

Further information: <u>DEWNR Soil and Land Program</u>

