FRG Forest Ridge Land System

Area: 30.5 km^2

Landscape: Widely spaced pair of elongate, low, parallel calcarenite ridges, trending northwest to southeast, north of Mt. Gambier. They are separated by the swampy, lowland, Young Land System (Dismal Swamp).

Annual rainfall: 730 – 750 mm average

Geology: Quaternary, Pleistocene Bridgewater Formation calcreted calcarenite stranded beach ridge deposit.

Main soils:
B6 (20%) Shallow loam over red-brown clay on calcrete (Petrocalcic Red Chromosol-Kandosol)
B3 (19%) Shallow sandy loam on calcrete (Petrocalcic Red Tenosol-Kandosol-Rudosol

Minor soils:
B4 (11%) Shallow red loam on limestone (Petrocalcic Red-Brown Dermosol)
H3 (10%) Bleached siliceous sand (sandy Bleached Tenosol)
F1 (9%) Loam over brown or dark clay (Brown-Dark Chromosol-Sodosol)
I1 (9%) Highly leached sand (Aeric Podosol)
I2 (7%) Bleached siliceous sand (sandy Bleached Tenosol)
B7 (6%) Shallow sand over clay on calcrete (sandy Petrocalcic Sodosol-Chromosol)
G3 (4%) Thick sand over clay (sandy Brown-Red Chromosol-Sodosol)

Summary: The ridges have well-drained soils, the main limitations are shallow depths over calcarenite, which can be ripped to increase the root depth, especially for horticultural or tree crops. Deeper sands, which occupy 16% of the area, have fertility, water repellence and wind erosion constraints.

Soil Landscape Unit summary: Forest Ridge Land System (FRG)

SLU	% of area	Component	Main soils	Prop#	Notes
MOB	6.3	Rise	B6	D	**MOB** Gently undulating linear dune form rise, with shallow red, ironstone gravelly, sandy-loam over red clay on calcarenite, with patches of deeper, semi-wet bleached siliceous sands on lower slopes & some calcarenite outcrop (<10%). **MOC** Undulating rise as above. Main soils: ***Plains and rises:*** Shallow red loam on limestone - **B4**, Shallow sandy loam over red-brown clay on calcrete - **B6** and Shallow sandy loam on calcrete - **B3**. ***Dunes:*** Highly leached sand - **I1**, Bleached siliceous sand - **H3**.
		Dune	I1H3	M	
MOC	36.4	Rise	B4B6 B3	D	
MRB	0.4	Rise	B6B4	D	**MRB** Gently sloping calcreted dune range with very shallow red and brown loam/red clay soils and deep leached sand or sand/clay rises. **MRC** As above undulating rises. Main soils: ***Rises:*** Shallow sandy loam over red-brown clay on calcrete - **B6** and Shallow red loam on limestone - **B4**. ***Dune ranges:*** Bleached siliceous sand - **H3** and Shallow sandy
MRC	9.7	Dune range	H3B6	D	

					loam over red-brown clay on calcrete - **B6**.
MSBv	0.6	Rise	I1H3	D	Gently sloping dune range with deep siliceous neutral to acid sands and sand over brown poorly structured clay soils. 30-60% swales with shallow sandy loam, often on red clay, over calcrete. Volcanic ash occurs in the surface horizons. Main soils: Highly leached sand - **I1** and Bleached siliceous sand - **H3**.
MWA	2.9	Plain	B3B7	D	**MWA** Plains with shallow clay loam over poorly structured brown clay or loam over mostly thin, red clay on calcarenite, with 20-30% sandy rises with deep sandy siliceous sand. **MWB** Gently undulating rises with soils as above. Main soils: ***Plains and rises:*** Shallow sandy loam on calcrete - **B3** and Sand over friable brown clay on calcrete - **B7**.
MWB	10.3	Rise	B3B7	D	
MYA	0.9	Plain	F1	D	**MYA** Plain with shallow ironstone gravelly sandy loam over brown, poorly structured clay on calcarenite. **MYB** Gently undulating rises as above. Main soils: Loam over brown or dark clay - **F1**.
MYB	8.2	Rise	F1	D	
OFD	10.9	Low dune	I1I2	D	Deep moderately to highly leached siliceous sands on low dunes. Main soils: Highly leached sand - **I1** and Wet highly leached sand - **I2**.
OMD	2.7	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**.
PPB	0.1	Rise	I1	D	Gently undulating rises with deep leached siliceous sand, and plains with acid sand over acid yellow-brown clay soils and deep acid poorly drained sands with coffee rock on subsoils. Main soils: Highly leached sand - **I1**.
PRBv	8.9	Plain	G3I2 I1	E	Gently undulating sand plains & rises with poorly drained deep sand over poorly structured brown clay and well drained bleached sands, especially on rises. Volcanic ash in surface. Main soils: Thick sand over clay - **G3**, Wet highly leached sand - **I2** and Highly leached sand - **I1**.
		Rise	G3I2 I1	E	
Xxa	1.5	Swamp	N1	D	Swamps with acid to neutral peaty soils and <30% sandy rises. Main soils: Peaty soil – **N1**.

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:

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.

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.

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.

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

Further information: DEWNR Soil and Land Program