

MBU Mount Burr Land System

- Area:** 221.4 km²
- Landscape:** The Mount Burr highland is a high range with extensive sand spreads and calcarenite slopes. There are some exposures of basaltic volcanic materials upon which the range has accreted.
- Rainfall:** 730 – 845 mm average
- Geology:** Calcreted aeolianite of the Pleistocene Bridgewater Formation barrier shoreline deposits are dominant. Pleistocene basaltic volcanic materials are interspersed throughout the land system, particularly on the higher ground. Basalt occurs in places.
- Main soils:**
- B3** Shallow sandy loam on calcrete (Petrocalcic Red Tenosol-Kandosol-Rudosol) (23%)
 - B6** Shallow loam over red-brown clay on calcrete (Petrocalcic Red Chromosol-Kandosol) (23%)
- Minor soils:**
- I2** Wet highly leached sand (Aquic or Semi-Aquic Podsol) (17%)
 - H3** Bleached siliceous sand (sandy Bleached Tenosol) (9%)
 - I1** Highly leached sand (Aeric Podsol) (9%)
 - B7** Shallow sand over clay on calcrete (sandy Petrocalcic Sodosol-Chromosol) (7%)
 - O1** Volcanic soil (Andic Tenosol) (5%)
- Summary:** Constraints to land use are soil depth and water holding capacity on shallow soils, fertility and wind erosion risk on sands, especially on upper part of the range. Waterlogging and wetness occurs at the base of the range in run-on situations. While half of the soils are shallow over calcrete, ripping can increase effective soil depth. Deep soils are sands mostly.

Soil Landscape Unit summary: Mount Burr Land System (MBU)

SLU	% of area	Component	Main soils	Prop#	Notes
MAB	0.4	Rise	B3RR	D	Gently undulating calcreted former beach ridge with stony, very shallow red and brown loamy over red clay soils. >50% bare calcrete. Main soils: <u>Shallow sandy loam on calcrete</u> - B3 and <u>Rock or exposed calcrete</u> - RR .
MECv	0.9	Hillslope	B7G3B6	D	Undulating calcreted calcarenite ridge with shallow sandy loam over red or poorly structured brown clay soils. Volcanic ash influence in surface. Main soils: Hillslopes: <u>Sand over friable brown clay on calcrete</u> - B7 , <u>Thick sand over clay</u> - G3 and <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6 . Depressions: <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6 and <u>Bleached siliceous sand</u> - H3 .
MEE	0.2	Depression	B6H3	D	
MHA	0.3	Plain	B6H3	D	MHA Plain with shallow sand over red clay and deep yellow bleached sands.
MHB	32.9	Rise	B3B6	V	
		Dune	I2H3	L	



MHBv	1.7	Rise	B6B3I1	D	<p>over red sandy clay over calcrete. 10-20% deep bleached siliceous sands on dunes.</p> <p>MHBv As above, with volcanic ash in surface.</p> <p>MHC Undulating slopes on calcarenite range as for MHB but with 10-30% rock outcrop.</p> <p>MHCv As above with volcanic ash in surface.</p> <p>MHDv Rolling rises as for MHB, volcanic ash in surface.</p> <p>MHF Steep rises or low hills as above.</p> <p>MHZv Broad crest of range with moderately shallow sand over red or poorly structured brown clay on calcarenite. Deep sands on rises. Volcanic ash in surface.</p> <p>Main soils: Plains: <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6 and <u>Bleached siliceous sand</u> - H3. Hills and rises: <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6 and <u>Shallow sandy loam on calcrete</u> - B3, <u>Highly leached sand</u> - I1, and <u>Wet highly leached sand</u> - I2. Dunes: <u>Wet highly leached sand</u> - I2; <u>Bleached siliceous sand</u> - H3 Broad crests: <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6, <u>Sand over friable brown clay on calcrete</u> - B7 and <u>Bleached siliceous sand</u> - H3.</p>
MHC	10.7	Hill/Rise	B6B3I2	D	
MHCv	15.4	Hill/Rise	B6B3I2	D	
MHDv	0.7	Hill/Rise	B3B6	D	
MHF	0.1	Hill/Rise	B3B6	D	
MHZv	0.8	Broad Crest	B6B7H3	D	
MLEK	0.1	Karst depression	RRB3	D	<p>Karst depression with mostly very shallow loam over, or bare calcreted calcarenite.</p> <p>Main soils: <u>Rock or exposed calcrete</u> - RR and <u>Shallow sandy loam on calcrete</u> - B3.</p>
MLEv	0.1	Swale	B3B6	D	<p>Depression with shallow sandy loam over thin red clay on calcarenite. 10-20% bare rock. <10% deep sand and sand over clay on dunes. Volcanic ash in surface.</p> <p>Main soils: Swales: <u>Shallow sandy loam on calcrete</u> - B3 and <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6. Dunes: <u>Wet highly leached sand</u> - I2; <u>Bleached siliceous sand</u> - H3</p>
		Dune	I2H3	M	
MMK	0.1	Plain	G3N3	V	<p>MMK Plain at base of The Bluff with sand over poorly structured brown clay, 20-30% non-swampy depressions with non-peaty wet soils. Few swamps are peaty.</p> <p>MMUv Gently sloping plain on lower slopes on east side of the Mt.Burr Range with mostly deep sands, often poorly drained. 10-20% swampy depressions with mostly peaty soils. Volcanic ash in surface.</p> <p>Main soils: Plains: <u>Thick sand over clay</u> - G3 and <u>Wet clay loam</u> - N3 or <u>Highly leached sand</u> - I1 and <u>Wet highly leached sand</u> - I2. Swamps: <u>Peaty soil</u> - N1 and <u>Wet clay loam</u> - N3.</p>
		Swamp	N3	C	
MMUv	4.2	Plain	I1I2	V	
		Swamp	N1N3	L	
MNBK	0.1	Rise	H3G3	D	<p>MNBK Gently sloping rise with moderately deep yellow/bleached siliceous sand often over yellow clay. 10-30% shallow sandy loam on calcreted calcarenite. Karst or sinkholes common.</p> <p>MNBv As above with volcanic ash in surface.</p> <p>Main soils: <u>Bleached siliceous sand</u> - H3; <u>Thick sand over clay</u> - G3</p>
MNBv	0.2	Rise	H3G3	D	
MOB	0.7	Rise	B6	D	<p>Gently undulating rises with shallow sandy loam (sometimes ironstone gravelly) grading to red-brown sandy clay loam or clay over calcreted calcarenite. <10% deep, leached sands.</p> <p>Main soils: Rises: <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6. Dunes: <u>Highly leached sand</u> - I1 and <u>Bleached siliceous sand</u> - H3.</p>
		Dune	I1H3	M	



MRBv	0.2	Plain	B6	D	<p>MRB Low, gently undulating calcreted former beach ridge with very shallow red and brown loam/red clay soils, < 10% deep leached sand or sand/clay rises. Volcanic ash in surface.</p> <p>MRC As above undulating rises.</p> <p>MRCv As above with volcanic ash in surface.</p> <p>Main soils:</p> <p>Plains: <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6.</p> <p>Rises: <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6 and <u>Shallow sandy loam on calcrete</u> - B3.</p>
MRC	0.1	Rise	B6B3	D	
MRCv	0.1	Rise	B6B3	D	
MSBv	0.4	Rise	B6G3H3	D	<p>MSBv 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.</p> <p>MSCv As above, undulating rises.</p> <p>Main soils: <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6, <u>Thick sand over clay</u> - G3 and <u>Bleached siliceous sand</u> - H3.</p>
MSCv	0.3	Rise	B6H3	D	
MVB	2.0	Rise	B4B6B3	V	<p>Gently sloping former beach ridge with shallow clay loam to sandy loam over structured red clay on calcreted calcarenite. 10-30% bare rock. 20-30% swamps.</p> <p>Main soils:</p> <p>Rises: <u>Shallow red loam on limestone</u> - B4, <u>Shallow sandy loam over red-brown clay on calcrete</u>- B6 and <u>Shallow sandy loam on calcrete</u> - B3.</p> <p>Swamps: <u>Peaty soil</u> - N1 and <u>Wet clay loam</u> - N3.</p>
		Swamp	N1N3	L	
Ofb	1.8	Dune	I1H3	D	<p>Ofb 60-90% dunes on gently sloping calcarenite range with deep siliceous sands. 10-30% shallow sandy loam on red clay on calcarenite.</p> <p>OFCv Dunes with deep siliceous sand with volcanic ash in the surface.</p> <p>OFD Low siliceous dunes.</p> <p>OFDv As above with volcanic ash in the surface.</p> <p>Main soils: <u>Highly leached sand</u> - I1, <u>Wet highly leached sand</u> - I2 and <u>Bleached siliceous sand</u> - H3.</p>
OFCv	0.3	Dune	I1	D	
OFD	0.1	Low dune	I1	D	
OFDv	1.3	Low dune	I1I2	D	
OHA	0.0	Dune	I1H3	E	<p>OHA Very high dune with deep siliceous sands co-dominant with shallow sands over calcarenite rises.</p>
		Stony rise	B3	E	
OHB	1.0	Dune	I1H3	D	<p>OHB High dunes as above, with <10% shallow sands over calcarenite rises.</p>
		Stony rise	B3	M	
OHbv	0.5	Dune	I1H3	V	<p>OHbv 60-90% dunes with deep siliceous sands, 20-30% shallow sand over red sandy clay on gently sloping calcarenite slopes. Volcanic ash in the surface.</p>
		Rise	B6	C	
OHD	0.3	Dune	I1H3	E	<p>OHD Low dunes, as above, 30-60% stony rises.</p>
		Stony rise	B3	E	
OHfv	0.1	Dune	I1I2	V	<p>OHfv 30-60% low dunes on gently sloping calcarenite range with 20-30% plains with mixed deep, poorly drained sand or sand over brown clay.</p>
		Plain	I2G3	C	
OHJ	0.5	Plain	B6B7	E	<p>OHJ 30-60% low sand dunes, co-dominant with plains with shallow sandy loam over red clay or poorly structured brown clay on calcarenite.</p> <p>Main soils:</p> <p>Dunes: <u>Highly leached sand</u> - I1 and <u>Bleached siliceous sand</u> - H3.</p> <p>Stony rises: <u>Shallow sandy loam on calcrete</u> - B3.</p> <p>Plains: <u>Wet highly leached sand</u> - I2 and <u>Thick sand over clay</u> - G3 or <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6 and <u>Sand over friable brown clay on calcrete</u> - B7.</p> <p>Rises: <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6.</p>
		Dune	I2I1	E	



OMb	2.7	Dune	I1	V	<p>OMb 60-90% low dunes on gently sloping calcarenite range with deep siliceous sands on dunes and sandy loam to sand over poorly drained brown clay on calcarenite. Minor occurrences of red clay subsoils.</p> <p>OMw As above, dunes on undulating calcarenite slopes.</p> <p>Main soils: Dunes: <u>Highly leached sand - I1</u>; <u>Wet highly leached sand - I2</u>. Slopes and rises: <u>Sand over friable brown clay on calcrete - B7</u>, <u>Thick sand over clay - G3</u> and <u>Shallow sandy loam over red-brown clay on calcrete - B6</u>. Swales: <u>Sand over friable brown clay on calcrete - B7</u> and <u>Thick sand over clay - G3</u>.</p>
		Slope	B7G3B6	C	
OMw	0.5	Dune	I1I2	V	
		Rise	B7G3B6	C	
		Swale	B7G3	M	
OObv	0.5	Dune	I1	V	
		Slope	C2L1	C	
OOfv	0.5	Dune	I1I2	V	
		Slope	C2L1	C	
PBAv	0.5	Plain	I2	D	
PBBv	1.8	Plain	I2	D	
		Dune	I1	M	
PEav	0.6	Plain	I2	V	
		Dune	I1	C	
PEbv	0.3	Plain	I2I1	V	
		Dune	I1	C	
PEEv	0.1	Depression	I2N3	V	
		Dune	I1I2	L	
PEi	0.4	Plain	I2	D	
		Swamp	N3I2	M	
PPAv	0.7	Plain	G3	D	
PPBv	1.5	Plain	H3I1	V	
		Rise	B3	L	
vAB	0.8	Plain	O1	D	
vAD	0.4	Hill/Rise	O1	D	
vAZ	0.1	Crest	O1	D	

Main soils: Volcanic ash soil - O1.



vCA	0.2	Plain	O1	D	vCA Plain with pinkish sand over clayey sand to sandy clay derived from sandy ash vCB As above with 20-30% rises with deep siliceous sand, with volcanic ash in the surface. Main soils: <u>Volcanic ash soil</u> - O1 .
vCB	0.5	Rise Plain	O1 O1	D M	
vDC	2.3	Hill/Rise	G2O1	D	Undulating hill with deep loamy sand over red/yellow clay and dark organic loam over brown clay in low parts of the landscape. Main soils: <u>Bleached sand over sandy clay loam</u> - G2 and <u>Volcanic ash soil</u> - O1 .
vEB	2.9	Rise Dune	B6O1 I1O1H3	V L	Gently undulating rises with sandy loam over red clay on calcarenite and 10-20% dunes with deep siliceous sandy soils overlain with dark loamy volcanic ash. Main soils: Rises: <u>Shallow sandy loam over red-brown clay on calcrete</u> - B6 and <u>Volcanic ash soil</u> - O1 . Dunes: <u>Highly leached sand</u> - I1 , <u>Volcanic ash soil</u> - O1 and <u>Bleached siliceous sand</u> - H3 .
vKF	0.3	Hill/Rise	O1RR	D	Very steep slopes on The Bluff with moderately deep, well-structured dark clay loam over volcanic ash/basalt. Main soils: <u>Volcanic ash soil</u> - O1 ; <u>Rock or exposed calcrete</u> - RR .
vQB	0.2	Rise	O1C3	D	Deep, dark, sandy loam over red clay developed in older, Pleistocene volcanic ash with occasional sandy rise or shallow loam on calcrete. vQB Gently undulating rises vQC Undulating rises, as above with shallow soils on basalt co-dominant. vQD Rolling rises, as above with shallow soils on basalt co-dominant. Main soils: Rises: <u>Volcanic ash soil</u> - O1 , <u>Friable gradational clay loam</u> - C3 and <u>Shallow stony soils on rock</u> - L1 .
vQC	1.0	Hill/Rise	O1L1	D	
vQD	1.8	Hill/Rise	O1L1	D	
vQE	0.2	Depression	C3O1	D	
XI-	0.0	Lake	WW	D	Water.
XuC	0.5	Swamp	N3	D	XuC Swamp with non-peaty wet soils XuD Non-peaty swamp with 20-30% sandy rises. Main soils: <u>Wet clay loam</u> - N3 .
XuD	0.2	Swamp	N3	D	

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

- | | |
|--|---------------------------------------|
| (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:

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.
- C2** Gradational loam on rock (Calcic / Hypercalcic Red Dermosol)
Loam to clay loam grading to friable red clay with soft Class I carbonate within 50 cm, grading to weathering rock within 100 cm.
- C3** Gradational clay loam (Calcic / Hypercalcic Red Dermosol)
Loam to clay loam grading to friable red clay with soft Class I carbonate within 50 cm, grading to alluvium within 100 cm.
- G2** Bleached sand over sandy clay loam (sandy Brown-Red Chromosol)
Sandy texture-contrast soil with a bleached A2 horizon 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.
- 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.
- L1** Shallow stony loam (Paralithic, Leptic Tenosol)
Shallow stony loam, often calcareous throughout or with depth, overlying weathering rock shallower than 50 cm.
- 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.
- RR** Bare rock.

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

