

GLE Glencoe Land System

- Area:** 26.3 km²
- Landscape:** Gently undulating plain around Glencoe, with jumbled rises and elongated dune forms running SE-NW, particularly on the south-western side of the unit. Landscape has been covered by volcanic ash.
- Annual rainfall:** 760 – 780 mm average
- Geology:** Pleistocene basic volcanic sediments overlie Gambier Limestone; Eocene-Miocene fossiliferous marine limestone. Volcanic materials are often sandy and contain pink feldspar grains.
- Main soils:** **O1** (34%) Volcanic soil (Andic Tenosol)
- Minor soils:** **C3** (20%) Friable gradational clay loam (Calcic-Hypercalcic Red Dermosol-Calcarosol)
I1 (13%) Deep Sand (Arenic Podosol)
I2 (12%) Wet highly leached sand (Aquic or Semi-Aquic Podosol)
B6 (11%) Shallow loam over red-brown clay on calcrete (Petrocalcic Red Chromosol-Kandosol)
- Summary:** Soils are developed in older volcanic ash and are fertile, well drained and are reasonably deep.

Soil Landscape Unit summary: Glencoe Land System (GLE)

SLU	% of area	Component	Main soils	Prop#	Notes
MDBv	1.8	Rise	B6	D	Gently sloping former beach ridge with shallow loam over red clay on calcreted calcarenite. 10-30% bare rock. 10-30% clay loam over structured red clay. Volcanic ash influence. Main soils: <u>Shallow sandy loam over red-brown clay on calcrete - B6.</u>
MVBv	2.1	Rise	B6B3	D	As above, with much shallower soils, less clay subsoil. Volcanic ash influence. Main soils: <u>Shallow sandy loam over red-brown clay on calcrete - B6</u> and <u>Shallow sandy loam on calcrete - B3.</u>
OFDv	0.5	Low dune	I1I2	D	Deep moderately to highly leached siliceous sands on low dunes, 10-20% shallow loamy sand, often over red-brown sandy clay loam/clay on calcreted calcarenite. Volcanic ash influence. Main soils: <u>Highly leached sand - I1</u> and <u>Wet highly leached sand - I2.</u>
PBAv	4.3	Plain	I1I2	D	Sand plain with well-drained, deep leached siliceous sands. Volcanic ash influence. Main soils: <u>Highly leached sand - I1</u> and <u>Wet highly leached sand - I2.</u>



vAA	2.5	Plain	O1F1	D	Plains with moderately deep tuffaceous loamy black well structured volcanic soils over limestone and deep loamy sand to clay loam over well structured red sandy clay developed in older, Pleistocene volcanic ash. Main soils: <u>Volcanic ash soil</u> - O1 and <u>Loam over brown or dark clay</u> - F1 .
vCB	3.8	Plain	O1	V	Plain with dark loamy structured volcanic soil with 20-30% rises with deep siliceous sand, with volcanic ash in the surface. Main soils: <u>Volcanic ash soil</u> - O1 .
		Rise	O1	C	
vGB	5.0	Rise	O1D2	D	vGB Gently sloping rise with dark sandy loam over red clay, often on calcarenite. vGE Depression, as above, also with deep wet siliceous sands. Main soils: Rises: <u>Volcanic ash soil</u> - O1 , <u>Loam over red clay</u> - D2 . Depressions: <u>Volcanic ash soil</u> - O1 and <u>Wet highly leached sand</u> - I2 .
vGE	4.0	Depression	O1I2	D	
vQB	75.1	Plain	O1C3	E	Plain with deep loamy sand to clay loam over well-structured red sandy clay developed in older, Pleistocene volcanic ash, with 20-30% sandy rises. Main soils: Plains and Rises: <u>Volcanic ash soil</u> - O1 and <u>Friable gradational clay loam</u> - C3 . Dunes: <u>Highly leached sand</u> - I1 and <u>Wet highly leached sand</u> - I2 .
		Dune	I1I2	C	
		Rise	O1C3	L	
XxC	1.0	Swamp	N1N3	D	Peat swamps. Main soils: <u>Peaty soil</u> - N1 and <u>Wet clay loam</u> - N3 .

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.
- 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.
- C3** Gradational clay loam (Calcic / Hypercalcic Red Dermosol)
Loam to clay loam grading to a friable red clay with soft Class I carbonate within 50 cm, grading to alluvium within 100 cm.
- D2** Hard loam over red clay (Calcic / Hypercalcic, Red Chromosol)
Hard setting sandy loam to clay loam (with variable quartzite stones) abruptly overlying a well structured red clay with soft Class I carbonate at depth.
- 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.
- 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](#)

