

CAN Canunda Land System

Area:	102.8 km ²
Landscape:	Coastal landscapes consisting of actively eroding coastal dunes with areas of exposed calcarenite
Annual rainfall:	740 – 775 mm average
Geology:	Semaphore Sand Member of the Holocene Saint Kilda Formation
Main soils:	H1 (47%) Carbonate sand (Shelly-Supravесcent Calcarosol-Rudosol) H2 (41%) Calcareous siliceous sand (sandy Calcarosol-Tenosol)
Minor soils:	N2 (6%) Saline soil (Salic-Hypersalic Hydrosol) B2 (3%) Shallow calcareous loam on calcrete (Petrocalcic Calcarosol-Rudosol) B3 (2%) Shallow sandy loam on calcrete (Petrocalcic Red Tenosol-Kandosol-Rudosol)
Summary:	The soils are predominantly sands, which are to some degree, calcareous. The main limitations associated with such soils are trace element deficiencies related to high pH and carbonate content. High wind erosion risk and extreme exposure to strong winds severely limit the land use opportunities here.

Soil Landscape Unit summary: Canunda Land System (CAN)

SLU	% of area	Component	Main soils	Prop#	Notes
VbC	0.3	Plain	B7N3	D	Sub-coastal plain with shallow clay loam over poorly structured clay, often wet. Main soils: <u>Sand over friable brown clay on calcrete</u> - B7 and <u>Wet clay loam</u> - N3 .
WEb	0.5	Dune	H2H1	E	Coastal dunes, beaches and sand spreads with mostly deep calcareous siliceous sands. WEb Complex of dunes & rocky shorelines. Dunes with deep calcareous siliceous and calcareous sands. Co-dominant rocky coast plains with shallow siliceous sand, often calcareous, on calcrete. WEc Active, bare, high coastal dunes, as above. <10% beaches. WEC High dunes, mostly vegetated and stable, as above. <10% beaches. WEd Active, bare, coastal dunes, as above. <10% rocky coast with bare calcrete or shallow calcareous or siliceous sand. <10% beaches. WED Dunes, mostly vegetated and stable, as above. <10% rocky coast with bare calcrete or shallow calcareous or siliceous sand. <10% beaches. WEL Vegetated high dunes as above on 10-30% sloping calcarenite rises. WEW Complex of dunes and beaches, generally vegetated and stable dunes as above; 20-30% beaches. Main soils: Beaches: <u>Shell sand</u> - H1 and <u>Deep brown sand</u> - H2 . Dunes: <u>Shell sand</u> - H1 and <u>Deep brown sand</u> - H2 . Stony plains: <u>Shallow sandy loam on calcrete</u> - B3 and
		Stony plain	B3B1	E	
WEc	30.3	Dune	H1H2	D	
		Beach	H1H2	M	
WEC	10.6	Dune	H1H2	D	
		Beach	H1H2	M	
WEd	0.4	Dune	H1H2	D	
		Rocky coast	RRB1B3	M	
		Beach	H1H2	M	
WED	9.6	Dune	H1H2	D	
		Rocky coast	RRB1B3	M	
		Beach	H1H2	M	
WEL	2.8	Dune	H1H2	D	
WEW	20.3	Dune	H1H2	V	
		Beach	H1H2	C	



					<p>Shallow highly calcareous sandy loam on calcrete – B1. Rocky coast: <u>Rock or exposed calcrete</u> – RR, <u>Shallow highly calcareous sandy loam on calcrete</u> – B1 and <u>Shallow sandy loam on calcrete</u> - B3.</p>
WFw	1.7	Dune	H1H2	V	Coastal dunes, beaches and sand spreads with a mixture of deep calcareous siliceous sands and calcareous, shelly sand.
		Beach	H1H2	C	
WFW	1.1	Dune	H1H2	V	<p>WFw Dunes and beaches, as above, active and bare. WFW Dunes and beaches, as above, mostly vegetated and stable.</p> <p>Main soils: Beaches: <u>Shell sand</u> - H1 and <u>Deep brown sand</u> - H2. Dunes: <u>Shell sand</u> - H1 and <u>Deep brown sand</u> - H2.</p>
		Beach	H1H2	E	
WHb	0.5	Rocky coast	RRB1B3	E	Sand spreads with deep sands; co-dominant with rocky coasts and flats. Rocky flats with bare calcrete, thin, shelly or siliceous sand, on calcrete.
		Dune	H1H2	C	
		Flat	N2H2	C	
WHx	0.3	Dune	H1H2	V	<p>WHb Rocky coast with bare calcrete, or very thin sand, mostly calcareous, on calcrete. 20-30% unstable, bare dunes with a mixture of deep calcareous siliceous sands and calcareous, shelly sand. 20-30% flats with wet saline, sandy soils and sands as on dunes. WHx Dunes bare and unstable, as above. 10-20% tidal flats with calcareous siliceous sands, often wet, and shallow sand over calcrete.</p> <p>Main soils: Rocky coast: <u>Rock or exposed calcrete</u> – RR, <u>Shallow highly calcareous sandy loam on calcrete</u> – B1 and <u>Shallow sandy loam on calcrete</u> - B3. Dunes: <u>Shell sand</u> - H1 and <u>Deep brown sand</u> - H2. Flats: <u>Wet saline clay loam</u> – N2c and <u>Deep brown sand</u> - H2. Tidal flats: <u>Deep brown sand</u> - H2, <u>Wet clay loam</u> - N3 and <u>Shallow sandy loam on calcrete</u> - B3.</p>
		Tidal flats	H2N3B3	L	
WJR	1.0	Flat	N2H2	D	Calcareous coastal flats.
		Dune	H1H2	M	
WJu	2.4	Flat	H2B2	V	<p>WJR Coastal flats with deep calcareous siliceous sands, commonly wet and saline. <10% stable, vegetated dunes with calcareous siliceous sands. WJu Coastal flats with deep calcareous siliceous sands and shallow calcareous sandy loam on calcrete. 20-30% bare, unstable dunes as above. 10-20% swamps with wet saline sands. WJU Coastal flats with deep calcareous siliceous sands and shallow calcareous sandy loam on calcrete. 20-30% stable, vegetated dunes as above.</p> <p>Main soils: Flats: <u>Wet saline clay loam</u> – N2c, <u>Deep brown sand</u> - H2 and <u>Shallow calcareous loam on calcrete</u> - B2. Dunes: <u>Shell sand</u> - H1 and <u>Deep brown sand</u> - H2. Swamps: <u>Wet saline clay loam</u> – N2c.</p>
		Dune	H1H2	C	
		Swamp	N2	L	
WJU	5.5	Flat	H2B2	V	<p>WJU Coastal flats with deep calcareous siliceous sands and shallow calcareous sandy loam on calcrete. 20-30% stable, vegetated dunes as above.</p> <p>Main soils: Flats: <u>Wet saline clay loam</u> – N2c, <u>Deep brown sand</u> - H2 and <u>Shallow calcareous loam on calcrete</u> - B2. Dunes: <u>Shell sand</u> - H1 and <u>Deep brown sand</u> - H2. Swamps: <u>Wet saline clay loam</u> – N2c.</p>
		Dune	H1H2	C	
WKQ	0.5	Sandy flat	H1H2	D	Coastal flats.
WKu	3.8	Flat	H1H2B3	E	<p>WKQ Coastal flats with deep, shelly calcareous, and calcareous siliceous sand. 10-30% wet, often saline, sand. WKu Coastal flats with deep, shelly calcareous, and calcareous siliceous sand or shallow sand on calcrete. 20-30% bare, unstable dunes as above. 20-30% swamps with saline, non-saline and peaty wet soils.</p> <p>Main soils:</p>
		Dune	H1H2	C	
		Swamp	N2N1N3	C	



					<p>Sandy Flats: <u>Shell sand - H1</u> and <u>Deep brown sand - H2</u>. Flats: <u>Shell sand - H1</u> <u>Deep brown sand - H2</u> and <u>Shallow sandy loam on calcrete - B3</u>. Dunes: <u>Shell sand - H1</u> and <u>Deep brown sand - H2</u>. Swamps: <u>Wet saline clay loam - N2c</u>, <u>Peaty soil - N1</u> and <u>Wet clay loam - N3</u>.</p>
WNR	2.8	Swamp Stony rise	N2 B2	V L	<p>Coastal swamps with saline, wet sandy soils. 10-20% stony rises with shallow calcareous sandy loam over calcrete; 10-30 bare calcrete. Main soils: Swamps: <u>Wet saline clay loam - N2c</u>. Stony rises: <u>Shallow calcareous loam on calcrete - B2</u>.</p>
WOr	2.3	Flat	H1H2B3	V	<p>Coastal flats WOr Coastal flats with mostly deep, shelly calcareous, and calcareous siliceous sand, but often shallow over calcrete. 20-30% swamps with wet saline sandy soils. <10% bare unstable dunes as above. <10% stony rises with shallow calcareous sandy loam on calcrete, or occasionally, bare calcrete. WOR Coastal samphire flats with often saline, wet sands. Co-dominant with stony flats with shallow calcareous sandy loam on calcrete. Often wet and saline. WOU Coastal flats with mostly deep, shelly calcareous, and calcareous siliceous sand, but often shallow over calcrete. 30-60% (co-dominant) dunes with deep, shelly calcareous, and calcareous siliceous sand.</p> <p>Main soils: Flats: <u>Shell sand - H1</u> <u>Deep brown sand - H2</u> and <u>Shallow sandy loam on calcrete - B3</u>. Dunes: <u>Shell sand - H1</u> and <u>Deep brown sand - H2</u>. Swamps: <u>Wet saline clay loam - N2c</u>. Stony rises: <u>Shallow calcareous loam on calcrete - B2</u>. Samphire flats: <u>Wet saline clay loam - N2c</u> and <u>Wet clay loam - N3</u>. Stony flats: <u>Shallow calcareous loam on calcrete - B2</u> and <u>Wet saline clay loam - N2c</u>.</p>
		Swamp	N2	C	
		Dune	H1H2	M	
		Stony rise	B2	M	
WOR	0.7	Samphire flat	N2N3	E	
		Stony flat	B2N2	E	
WOU	0.1	Flat	H1H2B3	E	
		Dune	H1H2	E	
WP-	0.5	Salt flat	N2	D	<p>Salt flat with bare salt crust and highly saline wet, sandy loam soils. Main soils: <u>Wet saline clay loam - N2c</u>.</p>
WRU	1.8	Flat	N2B3	V	<p>Coastal flats with wet saline sandy loam, and shallow sandy loam on calcrete, occasionally deep calcareous siliceous sand, especially on rises. 20-30% dunes with deep calcareous siliceous sand, or occasionally, carbonate sand, soils.</p> <p>Main soils: Flats: <u>Wet saline clay loam - N2c</u> and <u>Shallow sandy loam on calcrete - B3</u>. Dunes: <u>Deep brown sand - H2</u>.</p>
		Dune	H2	C	

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:

- B1** Shallow highly calcareous sandy loam on calcrete (Supravescent-Shelly Petrocalcic Calcarosol-Rudosol) Shallow, carbonate dominant sandy to loamy soil on calcrete. Carbonate dominates the soil profile as a whole, however, the surface soil may not be carbonate dominant, but needs to contain at least 30% carbonate.
- B2** Shallow calcareous sandy loam on calcrete (Petrocalcic Calcarosol)
Up to 40 cm calcareous loamy sand to sandy loam with variable calcrete rubble overlying calcreted calcarenite - rises.
- 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.
- 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.
- H1** Shell sand (Shelly Rudosol)
Very thick shell sand with no profile development other than slight organic darkening at the surface.
- 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.
- N1** Peat (Organosol) Peaty soil.
- N2c** Wet saline clay loam (Dermosolic, Salic Hydrosol)
Medium thickness dark grey to black clay loam to clay grading to a well structured dark grey clay with minor carbonates and a water table within 100 cm.
- N3** Seasonally waterlogged, non to marginally saline equivalents of soils listed above, viz.:
N3d Wet **B5**
N3e Wet **B7**
- RR** Bare rock

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

