## **CAN** Canunda Land System

**Area:** 102.8 km<sup>2</sup>

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-Supravescent 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)

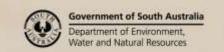
**Summary:** The soils are predominantly sands, which are to some degree, calcareous. The main

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.

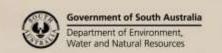
Soil Landscape Unit summary: Canunda Land System (CAN)

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> - <b>B7</b> and <u>Wet clay loam</u> - <b>N3</b> .
WEb	0.5	Dune	H2H1	Е	Coastal dunes, beaches and sand spreads with mostly
		Stony plain	B3B1	Е	deep calcareous siliceous sands.
WEc	30.3	Dune	H1H2	D	<b>WEb</b> Complex of dunes & rocky shorelines. Dunes with
		Beach	H1H2	М	deep calcareous siliceous and calcareous sands. Co-
WEC	10.6	Dune	H1H2	D	dominant rocky coast plains with shallow siliceous sand,
		Beach	H1H2	М	often calcareous, on calcrete.
WEd	0.4	Dune	H1H2	D	WEc Active, bare, high coastal dunes, as above. <10%
		Rocky coast	RRB1B3	М	beaches.
		Beach	H1H2	М	WEC High dunes, mostly vegetated and stable, as above.
WED	9.6	Dune	H1H2	D	<10% beaches.
		Rocky coast	RRB1B3	М	WEd Active, bare, coastal dunes, as above. <10% rocky coast with bare calcrete or shallow calcareous or siliceous
		Beach	H1H2	М	sand. <10% beaches.
WEL	2.8	Dune	H1H2	D	sana. < 10% beaches. <b>WED</b> Dunes, mostly vegetated and stable, as above. < 10%
WEW	20.3	Dune	H1H2	V	rocky coast with bare calcrete or shallow calcareous or
		Beach	H1H2	С	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: Shell sand - H1 and Deep brown sand - H2.
					Dunes: Shell sand - H1 and Deep brown sand - H2.
					Stony plains: Shallow sandy loam on calcrete - B3 and





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					Shallow highly calcareous sandy loam on calcrete – B1.
					Rocky coast: Rock or exposed calcrete – RR, Shallow highly
					<u>calcareous sandy loam on calcrete</u> – <b>B1</b> and <u>Shallow</u>
WFw	1.7	Dune	H1H2	V	sandy loam on calcrete - B3.  Coastal dunes, beaches and sand spreads with a mixture
WFW	1./			C	
WFW	1 1	Beach	H1H2	V	of deep calcareous siliceous sands and calcareous, shelly sand.
WFW	1.1	Dune	H1H2	E	Sunu.
		Beach	H1H2	=	WFw Dunes and beaches, as above, active and bare.
					WFW Dunes and beaches, as above, mostly vegetated
					and stable.
					Main soils:
					Beaches: Shell sand - H1 and Deep brown sand - H2.
					Dunes: Shell sand - H1 and Deep brown sand - H2.
WHb	0.5	Rocky coast	RRB1B3	Е	Sand spreads with deep sands; co-dominant with rocky
		Dune	H1H2	С	coasts and flats. Rocky flats with bare calcrete, thin, shelly
		Flat	N2H2	С	or siliceous sand, on calcrete.
WHx	0.3	Dune	H1H2	V	
		Tidal flats	H2N3B3	L	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.
					Main soils:
					Rocky coast: Rock or exposed calcrete – RR, Shallow highly
					<u>calcareous sandy loam on calcrete</u> – <b>B1</b> and <u>Shallow</u>
					sandy loam on calcrete - B3.
					Dunes: Shell sand - H1 and Deep brown sand - H2.
					Flats: Wet saline clay loam – N2c and Deep brown sand - H2.
					Tidal flats: <u>Deep brown sand</u> - H2, <u>Wet clay loam</u> - N3 and
					Shallow sandy loam on calcrete - <b>B3</b> .
WJR	1.0	Flat	N2H2	D	Calcareous coastal flats.
WJIX	1.0	Dune	H1H2	М	WJR Coastal flats with deep calcareous siliceous sands,
WJu	2.4	Flat	H2B2	/V	commonly wet and saline. <10% stable, vegetated dunes
WJu	2.4	_	H1H2	C	with calcareous siliceous sands.
		Dune	N2		WJu Coastal flats with deep calcareous siliceous sands and
WJU	5.5	Swamp Flat	H2B2	V	shallow calcareous sandy loam on calcrete. 20-30% bare,
W J U	٥.5	Dune	H1H2	C	unstable dunes as above. 10-20% swamps with wet saline
		אווטען	IIIПZ		sands.
					WJU Coastal flats with deep calcareous siliceous sands
					and shallow calcareous sandy loam on calcrete, 20-30%
					stable, vegetated dunes as above.
					Main soils:
					Flats: Wet saline clay loam – N2c, Deep brown sand - H2
					and <u>Shallow calcareous loam on calcrete</u> - <b>B2</b> .
					Dunes: Shell sand - H1 and Deep brown sand - H2.
					Swamps: Wet saline clay loam – N2c.
WKQ	0.5	Sandy flat	H1H2	D	Coastal flats.
WKu	3.8	Flat	H1H2B3	Е	WKQ Coastal flats with deep, shelly calcareous, and
		Dune	H1H2	С	calcareous siliceous sand. 10-30% wet, often saline, sand.
		Swamp	N2N1N3	С	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.
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					Main soils:

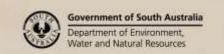




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					Sandy Flats: Shell sand - H1 and Deep brown sand - H2.
					Flats: Shell sand - H1 Deep brown sand - H2 and Shallow
					sandy loam on calcrete - <b>B3</b> .
					Dunes: Shell sand - H1 and Deep brown sand - H2.
					Swamps: Wet saline clay loam – N2c, Peaty soil – N1 and
					Wet clay loam - N3.
WNR	2.8	Swamp	N2	٧	Coastal swamps with saline, wet sandy soils. 10-20% stony
		Stony rise	B2	L	rises with shallow calcareous sandy loam over calcrete; 10-
		0.0,		_	30 bare calcrete.
					Main soils:
					Swamps: Wet saline clay loam – N2c.
					Stony rises: Shallow calcareous loam on calcrete -B2.
WOr	2.3	Flat	H1H2B3	V	Coastal flats
WOI	2.5				4
		Swamp	N2	С	WOr Coastal flats with mostly deep, shelly calcareous, and
		Dune	H1H2	М	calcareous siliceous sand, but often shallow over calcrete.
		Stony rise	B2	М	20-30% swamps with wet saline sandy soils. < 10% bare
WOR	0.7	Samphire	N2N3	Е	unstable dunes as above. <10% stony rises with shallow
		flat			calcareous sandy loam on calcrete, or occasionally, bare
		Stony flat	B2N2	Е	calcrete.
WOU	0.1	Flat	H1H2B3	Е	WOR Coastal samphire flats with often saline, wet sands.
		Dune	H1H2	Е	Co-dominant with stony flats with shallow calcareous
					sandy loam on calcrete. Often wet and saline.
					<b>WOU</b> 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.
					Main soils:
					Flats: Shell sand - H1 Deep brown sand - H2 and Shallow
					sandy loam on calcrete - B3.
					Dunes: Shell sand - H1 and Deep brown sand - H2.
					Swamps: Wet saline clay loam – N2c.
					Stony rises: Shallow calcareous loam on calcrete - B2.
					Samphire flats: Wet saline clay loam – N2c and Wet clay
					<u>loam</u> - <b>N3</b> .
					Stony flats: Shallow calcareous loam on calcrete - B2 and
					<u>Wet saline clay loam</u> – <b>N2c</b> .
WP-	0.5	Salt flat	N2	D	Salt flat with bare salt crust and highly saline wet, sandy
					loam soils.
					Main soils: <u>Wet saline clay loam</u> – <b>N2c</b> .
WRU	1.8	Flat	N2B3	V	Coastal flats with wet saline sandy loam, and shallow
		Dune	H2	Ċ	sandy loam on calcrete, occasionally deep calcareous
		20110	' ' -	~	siliceous sand, especially on rises. 20-30% dunes with deep
					calcareous siliceous sand, or occasionally, carbonate
					sand, soils.
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					Main soils:
					Flats: Wet saline clay loam – N2c and Shallow sandy loam

# 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:

- 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.
- 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.
- 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.
- 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.
- Wery 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.
- 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 <u>Seasonally waterlogged, non to marginally saline equivalents of soils listed above</u>, viz.:

N3d Wet B5 N3e Wet B7

**RR** Bare rock

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

