

# CDC Cape du Couedic Land System

The system on the south-west tip of Kangaroo Island which mostly consists of jumbled shelly sand dune deposits. The area stretches around Maupertuis Bay from Cape du Couedic to Sandy Beach: it is bounded to the north by the Rocky River, and extends approximately 9 km inland, where it is wedged between the Rocky River National Park Headquarters in the north, and Yacca Flat in the south.

**Area:** 61.9 km<sup>2</sup>

**Annual rainfall:** 630 – 740 mm average

**Geology:** Recent and some very recent shell sand deposits (Holocene age Gantheaume Sand and Semaphore Sand members of the St. Kilda Formation). There are some areas with surface to near surface expression of calcreted calcarenite (Pleistocene age Bridgewater Formation). Some meta-sandstone (early Cambrian age Kanmantoo Group Middleton Sandstone) is exposed in coastal cliffs around the Cape du Couedic area, and along the Maupertuis Bay coastline cliffs, especially near Sandy Beach.

**Topography:** Jumbled dune topography with some depression areas. The highest dunes are over 30 m high. These dunes mostly overlie a landscape of undulating rises. Coastal cliffs vary from about 20 m to 120 m in height. Cliffs are mostly calcarenite, however, meta-sandstone is exposed in some cliffs. Beach areas with foredunes occur at Sandy Beach, and just south of the mouth of the Rocky River, which looks like it was the outlet of the Rocky River in past times. There is also some evidence that the Rocky River once flowed south into Yacca Flat.

**Elevation:** Max elevation reaches almost 200 m. Elevation typically varies from 70 m to 170 m

**Relief:** Typically from 20 m to 50 m

**Main Soils:** **H1** Deep shell sands

**Minor Soils:** **A1-B1** Moderate to shallow shelly soil on calcrete  
**B1-B2** Very shallow organic soil on calcrete

**Main Features:** The system is non-arable due to fragile and infertile soils, and has a covering of native scrub. Nature conservation is the main priority here.

**Soil Landscape Unit summary:** Cape du Couedic Land System (CDC)

SLU	% of area	Main features #
M-B M-D	1.0 0.7	Non-arable sheet calcrete areas. Main soils: mostly not soil, but exposed calcrete outcrop ( <b>RR</b> ). With areas of very shallow, dark and organic sandy to loamy calcareous soil on calcrete <b>B1-B2</b> ( <i>Petrocalcic Rudosol</i> ). With some deeper shelly soils on calcrete ( <b>B1</b> ). <b>M-B</b> – slopes (4-10%, 2e) <b>M-D</b> – slopes (15-30%, 4-3e)
MbD MbYA	0.4 12.9	Non-arable calcreted areas: with moderate depth to shallow shelly soils. Main soils: moderate depth to shallow shelly loamy to sandy soil <b>A1-B1</b> ( <i>Petrocalcic Shelly Calcarosol</i> ). Some deeper shell sands occur <b>H1</b> ( <i>Shelly Calcarosol</i> ). <b>MbD</b> – rise (slopes 10-30%, 4-5e) <b>MbYA</b> – old low smooth jumbled dunes (<5m), on undulating rises.
MaD	0.2	Non-arable calcreted areas: with shallow shelly soils.



		Main soils: shallow fine shelly sandy to loamy soil on calcrete <b>B1</b> ( <i>Petrocalcic Shelly Calcarosol</i> ). With some shallow non-shelly calcareous soils on calcrete <b>B2</b> ( <i>Petrocalcic Calcarosol</i> ). Also with some bare calcrete outcrop ( <b>RR</b> ). <b>MaD</b> – slopes (10-20%, 4e)
WAB	3.5	Coastal calcarenite cliffs. Often with rocky (meta-sandstone) base. <b>WAB</b> – calcarenite cliffs (>100%). Sometimes with steep slopes (>30%) as upper slopes. Includes river cliffs at the mouth of the Rocky River.
WBB	0.04	Rocky coastal cliffs. Cliffs usually capped by calcarenite. Rock mostly meta-sandstone. <b>WBB</b> – rocky cliffs (>100%)
WGC WGD WGE WGM WGN WGO WGQ WGR WGe WGn	2.4 36.4 7.6 0.7 5.3 0.4 0.6 5.1 0.9 0.4	Non-arable shell sand areas. Main soils: deep shell sand soil <b>H1</b> ( <i>Shelly Calcarosol-Rudosol</i> ). Sometimes there is some shallow to moderate depth soil on calcrete, especially in areas with low dunes. ' <b>WGR</b> ' depressions often have some moderate depth soil over a 'soft' shelly pan, and sometimes have some calcarenite fragments/rubble. <b>WGC</b> – mostly high jumbled dunes (>15m) <b>WGD</b> – mostly jumbled dunes (5-15m) <b>WGE</b> – mostly low jumbled dunes (<5m). <b>WGM</b> – mostly jumbled dunes (5-15m) on slopes of 10-30%. <b>WGN</b> – mostly low jumbled dunes on slopes of 10-30%. Lower slopes on unit adjacent to Sandy river are sand spreads on even steeper (30-100%). <b>WGO</b> – shell sand deposits on slopes of 30-100%. Includes shell sand deposits on the river cliffs at the mouth of Sandy River. <b>WGQ</b> – depression, with some very low jumbled dunes. <b>WGR</b> – imperfectly drained depressions. Including old river bed of the Rocky River. <b>WGe</b> – mostly bare, beaches and low jumbled dunes (<5m) <b>WGn</b> – mostly bare, low jumbled dunes on slopes of 10-30%.
WHE	21.5	Non-arable shell sand areas: older areas with some soils on calcrete (<1m). Main soils: deep shell sand soil <b>H1</b> ( <i>Shelly Calcarosol</i> ). With some moderate depth shell sand soil on calcrete <b>A1</b> ( <i>Petrocalcic Shelly Calcarosol</i> ). <b>WHE</b> – mostly low smooth jumbled dunes, often in swale areas, on undulating land (<5m).
WT-	0.2	Rocky reefs.

# Classes in the 'Soil Landscape Unit summary' table (eg. 2-1e, 3w, 2y, etc) describe the predominant soil and land conditions, and their range, found in Soil Landscape Units. The number '1' reflects minimal limitation, while increasing numbers reflect increasing limitation. Letters correspond to the type of attribute:

a - wind erosion                      e - water erosion                      f - flooding                      g - gullyng  
r - surface rockiness                      s - salinity                      w - waterlogging                      y - exposure

### Detailed soil profile descriptions:

#### Main Soils:

**H1** Deep shell sands (*Shelly Calcarosol-Rudosol*). Deep fine shell sand soil: dark grey, grey-brown, brown or light grey topsoil over light grey to brown subsoil. Usually with an organic build-up, and some leaching of carbonate, from topsoil layers. Jumbled dunes and depressions.

#### Minor Soils:

**A1-B1** Moderate to shallow shelly soil on calcrete (*Petrocalcic Shelly Calcarosol*). Moderate to shallow depth dark grey, grey-brown or brown, sometimes rubbly, fine shell sand on calcrete. Some soils in depressions are rubbly and overlie unconsolidated but massive, light grey coarse shell sand. Organic build-up in surface layers, especially in depressions, and some leaching of carbonate has occurred. Older dunes and some depressions.

**B1-B2** Very shallow organic soil on calcrete (*Petrocalcic Rudosol*). Very shallow, dark and organic rich, rubbly and calcareous loamy to sandy soil on calcrete. Often shelly. Found on wind-swept clifftops where the land surface is a mosaic of bare calcrete outcrop and calcrete covered with a thin veneer of soil.

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

