

COG Coorong Land System

Coastal dunes and swamps extending from Lake Alexandrina to Cantara

Area: 403.2 km²

Annual rainfall: 445 – 565 mm average

Geology: The System includes coastal dune sands of the Semaphore Formation (medium to coarse shell and quartz sands), and lagoonal sediments of the St. Kilda Formation. These include shell grits, marls and limestones. There are minor calcarenites of the Bridgewater Formation where older calcareous sands have become indurated.

Topography: The Land System comprises a virtually unbroken frontal dune with a parallel back lagoon and associated swamps. The shallow waters of the Coorong occupy most of the lagoon corridor. On the landward side of the corridor are low stony rises.

Elevation: 0 - 35 m

Relief: Up to 35 m

Soils: Three broad soil categories occur, viz. deep sands, shallow sandy to loamy soils over calcarenite, and swampy soils.

Main soils

Dunes

H1 Shell sand

Minor soils

Swamps

N2 Swamp soil

Flats

B7 Sand over sandy clay on calcrete

B2 Shallow calcareous sandy loam over calcrete

Rises

B3 Shallow stony loamy sand over calcrete

B8 Thick bleached sand over calcrete

H2 Deep brown sand

Main features: The Coorong Land System consists mainly of high coastal sand dunes, with extreme wind erosion potential and very low fertility, saline swamps and the lagoon itself. All of this land has very low agricultural potential, but significant conservation value. Most is contained within reserves. Minor rises on the eastern edge have some grazing value, but these areas are scattered and small in total area.



Soil Landscape Unit summary: 8 Soil Landscape Units (SLUs) mapped in the Coorong Land System:

| SLU | % of area | Main features # |
|-------------------|-------------------|---|
| MJn | 3.3 | Low irregular stony rises and depressions (some swampy) formed on calcreted calcarenite of the Bridgewater Formation, associated with the Coorong lagoon. Main soils: <u>shallow stony loamy sand over calcrete</u> - B3 (V) and <u>thick bleached sand over calcrete</u> - B8 (M), with <u>swamp soils</u> - N2 (M) in depressions. The combination of shallow stony and sandy soils with wet saline soils minimizes the agricultural potential of this land. |
| WFC | 33.4 | Jumbled frontal coastal dunes up to 35 metres high comprising mixed shelly and siliceous sands. They are actively eroding in places. Main soil: <u>shell sand</u> - H1 (D). The dunes are highly infertile sands with extreme susceptibility to wind erosion. Most of the area is located in reserves. |
| WFF | 2.3 | Complex of high coastal dunes and swampy depressions in the approximate ratio of 50:50. The swampy depressions may be partially inundated. These areas occur sporadically on the eastern margin of the main dunes (WFC), adjacent to the Coorong lagoon. The dunes comprise mixed shelly and siliceous sands and the swamps are formed on lagoon deposits of marl and shell grit. Main soils: <u>shell sands</u> - H1 (E) on dunes and <u>swamp soils</u> - N2 (E) in swamps. This land is of no agricultural use, but has high conservation value. The dunes are extremely susceptible to wind erosion once the cover is removed. Most of the land is located in reserves. |
| WI- WP- WQ- | 1.3 0.4 5.6 | Flats, swamps and lagoons of the Coorong, formed on marls, shell grits and clays. WI- Flats with up to 50% swampy depressions and up to 30% sandy and stony rises. Main soils: <u>sand over sandy clay on calcrete</u> - B7 (C) and <u>shallow calcareous sandy loam on calcrete</u> - B2 (L) on flats, <u>swamp soil</u> - N2 (E) in swampy depressions, <u>deep brown sand</u> - H2 (L) and <u>thick bleached sand over calcrete</u> - B8 (M) on sandy rises, and <u>shallow stony loamy sand over calcrete</u> - B3 (M) on stony rises. WP- Bare salt pans. WQ- Complex of salt marsh, salt flats and lagoons. Main soil: <u>swamp soil</u> - N2 (D). Apart from the WI- land which has some well drained non saline land, these areas have no agricultural value and are an integral part of the Coorong wetlands environment. Most land is contained within reserves. |
| WVF | 1.1 | Frontal dunes with outcrops of calcarenite. This is a complex of WFC and MJn . Refer to descriptions of each. |
| -L- | 52.6 | Coorong Lagoon. |

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

- (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:*Dunes***H1** Shell sand (Shelly Rudosol)

Very thick shell sand with no profile development other than slight organic darkening at the surface.

*Swamps***N2** Swamp soil (Calcarosolic, Hypersalic Hydrosol)

Medium thickness dark grey calcareous loam becoming paler coloured with depth over a very highly calcareous light grey clay loam with saline water table in rubble marl at about 50 cm.

*Flats***B7** Sand over sandy clay on calcrete (Petrocalcic, Brown Chromosol)

Medium thickness brown sand to loamy sand with a paler coloured A2 layer over brown mottled sandy clay on calcrete or rubble within 50 cm.

B2 Shallow calcareous sandy loam over calcrete (Petrocalcic Calcarosol)

Medium thickness calcareous loamy sand to sandy loam over calcrete within 50 cm.

*Rises***B3** Shallow stony loamy sand over calcrete (Petrocalcic, Leptic Tenosol)

Loamy sand to loam with variable rubble and slight clay increase with depth overlying calcreted calcarenite shallower than 50 cm.

B8 Thick bleached sand over calcrete (Petrocalcic, Bleached-Leptic Tenosol)

Thick bleached sand over calcarenite.

H2 Deep brown sand (Petrocalcic, Brown-Orthic Tenosol)

More than 100 cm brown sand over calcrete.

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

