MAP Mangrove Point Land System

Low lying coastal areas along the east coast of Yorke Peninsula

Area: 56.8 km^2

Landscape: Low lying coastal areas which occur at various points along the east coast of Yorke Peninsula from Port Arthur near the head of St Vincent Gulf to Troubridge Point on the very southeastern tip of the Peninsula. These areas include tidal areas, saltpans, samphire and saltbush swamps and flats, coastal sand dunes and sand spreads, old raised beach flats, and coastal flats formed of calcareous loess or dominated by calcrete.

Wave action has caused sand, and in places shell grit, to aggregate at points along the coast, and has been a dominant landscape forming agent. Wind has also been a dominant agent in forming the landscape, resulting in coastal dune formation and the deposition of calcareous loess in certain areas. Some areas, lying between higher elevation inland areas and coastal flats and dunes, are underlain by alluvial or outwash clayey sediments, which typically overlie sandstone rock. In the south of the system there are calcreted areas, formed under terrestrial conditions, which have been inundated by sea level rises in recent geological times, and some calcreted flats are obviously remnant cores of former coastal dune areas.

The general trend is for these coastal deposits to become more calcareous from north to south. Siliceous sandy sediments with little fine carbonate content dominate the northern areas, while carbonate sands dominate the very southern area around Sultana Point.

Many of the areas aggregated by wave action jut into St Vincent Gulf, providing good and easy access to the sea, which was important in the early days of settlement when agricultural goods were transported on ketches from small port jetties to larger ships and harbours. Coastal towns and settlements which have developed on such land areas (mostly raised old beach flats) include: part of Port Clinton, Pine Point, Black Point, Sheoak Flat, Port Vincent, Stansbury and Coobowie.

Annual rainfall: 330 – 425 mm average

Main soils

N2	*saline soil*
H2	*siliceous sand*

Minor soils

H1	*carbonate sand*
B2	*shallow calcareous loam on calcrete*
A4-**A5**	*calcareous loam*
G3	*thick sand on clay*

Main features: The areas of this land system are mostly non-arable. Many areas are too saline to be used for agriculture, while many tidal areas are at risk of flooding or are regularly inundated. There are some raised beach flats and other coastal flats which can be cropped: these areas typically have soils formed in calcareous loess or else have shallow soil on calcrete. Coastal flats near Price are used as evaporation pans for salt harvesting.

Soil Landscape Unit summary: Mangrove Point Land System (MAP)

SLU	% of area	Main features
IXP	2.4	Land dominated by calcareous soils formed in alluvial clayey sediments which overlie weathered sandstone. Main soils: calcareous *thick sand over clay* **G3** grading to calcareous *sand over clay* **G4** and calcareous *loam over red clay* **D3**. IXP – marginally saline coastal flat/depression: a depositional area at the end of Winulta Creek and the unnamed drainage depression directly south.
KVO	0.4	Land dominated by calcareous soils formed in layers of calcareous loess overlying clayey outwash/alluvial sediments which overlie weathered sandstone. Main soils: *calcareous loam* **A5** grading to *gradational calcareous clay loam* **A6**. KVO – coastal flat/depression.
QKO QKT	2.9 1.3	Land dominated by shallow calcareous soil on calcrete. Main soils: *shallow calcareous loam on calcrete* **B2** with some calcareous *loam* **A4**-**A5**. QKO – low lying flats. QKT – marginally saline low lying stony flats.
QRK QRT	0.3 2.4	Land dominated by shallow calcareous soil on calcrete. Main soils: *shallow calcareous loam on calcrete* **B2**, probably with some *shallow loam on calcrete* **B3**. QRK – low stony rises. QRT – marginally saline low lying stony flats with some highly saline depressions: a remnant coastal dune area.
SiP	3.6	Land dominated by calcareous sandy topsoils overlying highly calcareous rubbly light clayey sediments: the sand is probably wind-deposited, while the clay is likely to be an alluvial deposit which has been infused with carbonate. Main soils: calcareous and rubbly *thick sand over clay* **G3** grading to calcareous *sand over clay* **G4** in depressions. SiP – marginally saline coastal flats with some highly saline depressions.
WIu	0.2	Coastal flats formed from non calcareous sandy sediments. Main soils: *siliceous sand* **H2**. WIu – marginally saline coastal flats with some very low coastal dunes and a few swampy depressions.
WDE1 WDH1	0.6 0.4	Coastal dunes mostly formed form non calcareous siliceous sand. Main soils: *siliceous sand* **H2**. WDE1 – low coastal dunes. WDH1 – very low coastal dunes with a few swampy depressions.
WEE1 WEE3 WEH1 WEH3	3.1 2.5 2.3 0.7	Coastal dunes mostly formed form siliceous sand. Main soils: calcareous to non calcareous *siliceous sand* **H2**. WEE1 – low coastal dunes. WEE3 – low coastal dunes with approximately 20% semi-arable areas. WEH1 – very low coastal dunes with some saline flats. WEH3 – low coastal dunes with some saline flats and approximately 20% semi-arable areas.
WGE1 WGD1 WGR WGu1 WGv1	1.8 0.6 2.2 1.2 1.0	Coastal dunes and flats mostly formed from carbonate sand. Main soils: *carbonate sand* **H1a**. WGE1 – low coastal dunes and beaches. WGD1 – dunes. WGR – flats with a few very low dunes: vague lines evident marking former coastlines. WGu1 – very low dunes, flats and highly saline depressions. WGv1 – flats, low dunes and a few highly saline depressions.
WJQ	3.3	Coastal flats, formed by wave action, which are largely overlain by calcareous loess. Main soils: *calcareous loam* **A4** and *shallow calcareous loam on calcrete* **B2**. WJQ – coastal flats with little apparent salinity: raised old beach areas.

WLQ WLR	0.9 0.7	Land dominantly composed of shell grit. Main soils: gritty *carbonate sand* **H1b**. WLQ – coastal flat with low coastal dunes: probably overlain in many parts by a thin layer of calcareous loess. WLR – narrow low lying coastal flat: possibly overlain in parts by a thin layer of calcareous loess.
WM- WO- WP- WR- WT- WU-	12.4 9.5 21.4 5.3 9.8 7.0	Low lying coastal land Main soils: *saline soil* **N2**. WM- – tidal flats with mangroves. WO- – highly saline samphire/saltbush flats with some tidal drainage lines. WP- – extremely saline salt flats/depressions: salt works evaporation pans south of Price and saltpan in Salt Swamp Creek. WR- – highly saline salt and/or samphire flats/depressions with tidal drainage lines and some very low coastal dunes. WT- – tidal flats. WU- – subtidal to tidal flats.

Detailed soil profile descriptions:

Main soils:

N2 *saline soil* [Supratidal-Extratidal-Hypersalic-Salic Hydrosol]
Highly saline soils found in tidal and swampy areas. These can be saline variants of the soils described below. However, these soils commonly have textures of silty clay loam to loam, often have organic-rich layers, and have grey and green colours in wet subsoil layers. Profiles in the north of the system often have calcareous upper layers overlying non calcareous lower layers.

H2 *siliceous sand* [Arenic Tenosol-Calcarosol]
Deep to moderate depth sandy soil dominantly composed of siliceous sand. These can be non calcareous throughout, or else can contain various amounts of fine carbonate grading to profiles which are calcareous throughout.

Minor soils:

H1 *carbonate sand* [Shelly Rudosol-Calcarosol]
Deep to moderate depth loamy sand to light fine sandy loam dominantly composed of carbonate sand (soil **H1a**). Found on dunes, flats and in swampy areas in the very south of the system around Sultana Point. A variant of this soil found on some coastal flats is dominantly composed of shell grit fragments (soil **H1b**).

B2 *shallow calcareous loam on calcrete* [Petrocalcic Calcarosol]
Shallow calcareous grey brown sandy loam or loam overlying calcrete. These soils grade to *shallow loam on calcrete* (soil **B3**). Found on flats and low rises in the south of the system, and on some raised beach flats which have been overlain with calcareous loss.

A4-**A5** *calcareous loam* [Hypercalcic-Lithocalcic Calcarosol]
Deep to moderate depth calcareous grey brown loamy to clay loamy soil. Subsoils often contain hard carbonate rubble. Profiles can be underlain by calcrete, and are sometimes underlain by clayey sediments. Commonly found on old raised beach flats.

G3 *thick sand over clay* [Brown-Red Sodosol]
Thick calcareous sandy topsoil layers overlying clayey subsoil sediments. These soils grade to *sand over clay* (soil **G4**) which have medium thickness topsoils, and *loam over clay* (soil **D3**) which have loamy topsoils. Found on some coastal flats. Such profiles are often underlain by weathered sandstone.

Further information: DEWNR Soil and Land Program