

WOP Wood Point Land System

Low sandhill country with marginally to highly saline swales and flats, north of Port Broughton

Area: 87.2 km²

Annual rainfall: 325 - 350 mm average

Geology: Relatively thin (less than 5 m?) veneer of windblown Molineaux Sand underlain by soft to rubbly calcareous materials (Woorinen Formation) deposited over old coastal sediments. These are mainly gypseous clays, but can include sand and shell beds.

Topography: Low dunes and sandy rises, 3 - 5 m high, covering 30 - 60% of the land surface, with a marked north west - south east orientation. There are some larger sandhills, but these generally occur as isolated dunes. They are commonly eroded. The swales or flats between the rises vary depending on their elevation. The higher level flats are sandy or stony with marginal salinity (little evidence of surface salinity), while the lower lying flats have increasing levels of salinity with progressively more halophytic vegetation. The most saline flats support samphire only. A prominent rise within the land system may be a basement rock high.

Elevation: 5 m in some swampy depressions to 30 m on the highest rise. The greatest elevation in the sandhill - swale country is 15 m.

Relief: Apart from the single prominent rise which is 20 m above the adjacent swamp, relief is generally less than 5 m, with the occasional sandhill being higher, but less than 10 m.

Soils: Calcareous soils predominate. These vary from deep sands to deep loams with clayey subsoils, rubbly and non rubbly sandy loams and sandy clay loams. The medium textured soils of saline flats and swamps are also calcareous.

Main soils:

- H2a** Deep calcareous sand - sandy rises
- A4a** Calcareous sandy loam - flats and non sandy rises
- A6** Calcareous loam - flats and non sandy rises

Minor soils:

- A4b** Rubbly calcareous loam - flats and non sandy rises
- D4** Loam over friable red clay - flats
- N2** Wet saline soil - wet flats
- H2b** Deep non calcareous sand - sandy rises
- A8** Gypseous loam - lunettes

Main features: This land is dominated by sandy soils on rising ground and marginally to highly saline soils on lower lying ground. Principal limitations to agricultural use are the low fertility and waterholding capacity, and wind erosion potential of the sands, and the salinity of the flats. Cropping is risky on the sand rises in the low rainfall conditions, and on the flats is usually only possible in seasons with strong early breaks to flush surface salts. As much of the flat ground is suited to chenopod shrubs, permanent grazing is a useful option.



Soil Landscape Unit summary: 11 Soil Landscape Units (SLU) mapped in the Wood Point Land System

SLU	% of area	Main features #
SSA SSB	2.6 1.8	Rising ground formed on highly calcareous Woorinen Formation deposits with heavy clay deposits on lower ground, and overlain in places by Molineaux Sand. SSA Very gently inclined slopes of less than 2%. SSB Gently inclined rises with slopes of 2-5%. Main soils: <u>calcareous sandy loam</u> - A4a (E) and <u>rubbly calcareous loam</u> - A4b (E), with <u>calcareous loam</u> - A6 (L) and <u>deep calcareous sand</u> - H2a (L) on sandy rises. All soils have slight fertility limitations due to their alkalinity. The shallow and sandy soils have restricted waterholding capacities and the sand rises are prone to wind erosion.
U-B	1.8	Isolated sandhills up to 10 m high, commonly blown out by the wind. Main soils: <u>deep calcareous sand</u> - H2a (V) with <u>deep non calcareous sand</u> - H2b (C). This land consists almost entirely of deep low fertility sands in exposed dunes, which are susceptible to wind erosion.
UIF UII	2.6 1.3	Gently undulating dunefields overlying highly calcareous medium textured sediments. UIF 60-90% low sandhills. UII 30-60% low sandhills. Main soils: <u>deep calcareous sand</u> - H2a (E) on the rises, with <u>rubbly calcareous loam</u> - A4b (C) and <u>calcareous sandy loam</u> - A4a (C) in swales and flats. The land is mainly sandy with soils of low fertility and waterholding capacity. Wind erosion is a potentially serious threat. The heavier ground on the lower slopes and flats is more fertile, less prone to erosion and has only slight limitations.
UVQ UVY	40.4 39.5	Gently undulating dunefield formed over saline and gypseous sediments. UVQ 30-60% low dunes with marginally saline swales. UVY Undulating plain with 30-60% sand spreads and hummocks and marginally to highly saline swales. Main soils: <u>deep calcareous sand</u> - H2a (E) on rises with <u>calcareous sandy loam</u> - A4a (E), <u>rubbly calcareous loam</u> - A4b (C), <u>calcareous loam</u> - A6 (L) and <u>loam over friable red clay</u> - D4 (M) in the swales and flats. This land is only semi arable due to a combination of low rainfall, salinity (flats) and low fertility / wind erosion potential (rises). These limitations are exacerbated by the complexity of the land and soil patterns.
VKC VKD VKF VKJ	0.9 1.0 0.7 7.4	Highly saline flats formed on gypseous clays of marine or lagoonal origin. VKC Internally draining highly saline flats. VKD Very highly saline samphire flats. VKF Very highly saline samphire flats with bare salt pans, flanked by gypseous lunettes. VKJ Moderately to highly saline flats with limited sandy rises. Main soils: saline <u>calcareous loam</u> - A6 (E), <u>wet saline soil</u> - N2 (C) in wet flats, <u>gypseous loam</u> - A8 on lunettes, <u>rubbly calcareous loam</u> - A4b (L) and <u>loam over friable red clay</u> - D4 (L) on moderately saline flats, with <u>deep calcareous sand</u> - H2a (L) on rises. Most of the land (except the sandy rises) has a saline water table at or near the surface and is too salty for cropping. With the exception of the wettest flats, the land is well suited to chenopod shrub based light grazing.

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

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| (D) Dominant in extent (>90% of SLU) | (C) Common in extent (20–30% of SLU) |
| (V) Very extensive in extent (60–90% of SLU) | (L) Limited in extent (10–20% of SLU) |
| (E) Extensive in extent (30–60% of SLU) | (M) Minor in extent (<10% of SLU) |



Detailed soil profile descriptions:

- A4a** Calcareous sandy loam (Regolithic, Hypercalcic Calcarosol)
Medium thickness sandy loam to sandy clay loam over a highly calcareous sandy clay loam to sandy clay, often with crystalline gypsum.
- A4b** Rubbly calcareous loam (Regolithic, Supracalcic Calcarosol)
Medium to thick calcareous sandy loam overlying rubbly carbonate in a sandy clay loam matrix.
- A6** Calcareous loam (Regolithic / Pedal, Hypercalcic Calcarosol)
Calcareous loam becoming more calcareous and clayey with depth.
- A8** Gypseous loam (Gypsic, Calcic Calcarosol)
Calcareous and gypseous loam becoming more clayey and gypseous with depth, continuing below 100 cm.
- D4** Loam over friable red clay (Hypocalcic, Effervescent / Pedaric, Red Sodosol)
Medium thickness calcareous sandy loam abruptly overlying a calcareous friable (saline) reddish sodic clay with gypsum crystals at shallow depth.
- H2a** Deep calcareous sand (Regolithic, Calcic Calcarosol)
Thick to very thick calcareous sand grading to a yellowish red very highly calcareous sand to clayey sand at depths between 50 and 100 cm.
- H2b** Deep non calcareous sand (Calcareous, Arenic, Red-Orthic Tenosol)
Thick non calcareous sand grading to a highly calcareous red sand to clayey sand.
- N2** Wet saline soil (Epicalcareous, Hypersalic Hydrosol)
Grey salt encrusted loam over either shell grit, grey mottled clay or semi-hard carbonate, with a saline water table within 100 cm.

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

