

TAU Taunta Land System

Range of rises and low hills extending from the south of Hundred of Colebatch to the south of Hundred of Petherick.

Area: 271.6 km²

Annual rainfall: 475 – 525 mm average

Geology: The land system is formed on a massive ancient coastal dune comprising mixed calcareous and siliceous sands which have hardened to calcarenite (Bridgewater Formation). There are extensive sand spreads (Molineaux Sand) overlying the landscape. These tend to be concentrated on the eastern (leeward) side of the range. Small depressions within the range are geologically variable and may be infilled with locally derived outwash sediments, drift sand or swamp sediments.

Topography: The Taunta Land System is an elongate range of rounded low hills with a NNW - SSE orientation running along the eastern side of the Log Crossing - Messent water course. The range has an overall relief of 45 m and slopes of 3-12%. Isolated closed depressions are scattered throughout the range. These are swampy in places. Sand deposits occasionally form low east west dunes, but are more commonly randomly spread over the land surface. The Taunta Land System only has about half of the amount of sand spread on the similar but younger Glyde Range to the west. Consequently there is a greater proportion of stony soils with associated surface stone and rocky reefs. Some areas, particularly in the south are too rocky for cultivation.

Elevation: 15 - 60 m

Relief: Up to 40 m, usually less than 20 m

Soils: Shallow soils over calcrete, and deep sandy soils are predominant.

Main soils: *Rises*

- B3** Shallow stony loamy sand on calcrete
- B7** Loamy sand over sandy clay loam on calcrete
- H3** Deep bleached sand
- G2** Sand over light sandy clay loam

Minor soils: *Swampy depressions*

- N2a** Sand over mottled saline waterlogged clay
- N2b** Wet saline calcareous loam
- N2c** Wet saline clay over sand

Well drained depressions

- G3** Deep bleached sand
- H3/G2** Sand over sandy clay loam

Main features: The Taunta Land System is characterized by low hills with predominantly well drained sandy and shallow stony soils. However, cropping is limited by low fertility, water repellence, wind erosion potential or shallow stony soils, depending on depth of sand cover. Depressions are minor overall, but have better productive potential, although swampiness and salinity are increasing.



Soil Landscape Unit summary: 6 Soil Landscape Units (SLUs) mapped in the Taunta Land System

SLU	% of area	Main features #
MJC	86.7	<p>Undulating to rolling rises and low hills formed on calcreted calcarenite and overlain by siliceous sand. There is up to 40 m relief and slopes vary from 3-12%. There is variable surface calcrete, depending on presence of sand. 10-20% stone cover is common, with outcropping reefs and heavy stone in places. Main soils: <u>loamy sand over sandy clay loam on calcrete</u> - B7 (C), <u>deep bleached sand</u> - H3 (L), <u>shallow stony loamy sand on calcrete</u> - B3 (E) and <u>sand over light sandy clay loam</u> - G2 (L).</p> <p>Key properties:</p> <p>Drainage: Rapidly to well drained.</p> <p>Fertility: Very low on deep sands to moderately low on stony soils.</p> <p>Physical condition: Surface soils are soft to loose and do not restrict root growth. Where subsoils occur they are friable and not restrictive to root growth.</p> <p>AWHC: Moderate on sandy soils. Very low to low on stony soils, due to shallow depth to hard calcrete.</p> <p>Salinity: Low.</p> <p>Erosion potential: Water: Low to moderate, depending on slope. Wind: High on sand spreads to moderately low on stony ground.</p> <p>Water repellence: Strong on sand spreads. Low to slight on stony land.</p> <p>Rockiness: Nil on sand spreads. Variable to 50%, usually less than 20% on stony slopes.</p> <p>Other: The higher rises are exposed.</p> <p><u>Summary:</u> Deep, low fertility, water repellent and erodible sands with shallow, stony soils of marginal fertility.</p>
MJt	4.6	<p>Depressions within the MJC range comprising about 80% low stony rises and 20% swampy flats. Main soils: <u>shallow stony loamy sand on calcrete</u> - B3 (E) and <u>loamy sand over sandy clay loam on calcrete</u> - B7 (E), with <u>wet saline calcareous loam</u> - N2b (M), <u>sand over mottled saline waterlogged clay</u> - N2a (M) and <u>wet saline clay over sand</u> - N2c (M) in swamps.</p> <p>Key properties:</p> <p>Drainage: Well drained to poorly drained in swampy depressions.</p> <p>Fertility: Moderately low to low.</p> <p>Physical condition: No limitations to root growth.</p> <p>AWHC: Moderate.</p> <p>Salinity: Moderately low.</p> <p>Erosion potential: Water: Low Wind: Moderately low.</p> <p>Water repellence: Moderately low.</p> <p>Rockiness: Less than 5% surface calcrete.</p> <p><u>Summary:</u> These areas are limited in extent but have reasonable pasture production potential provided fertility is maintained.</p>
NGF	2.3	<p>Mostly well drained depressions within the MJC range with up to 20% swampy flats. Main soils: <u>thick sand over friable clay</u> - G3 (E) and <u>thick sand over sandy clay loam</u> - H3/G2 (E), with <u>wet saline calcareous loam</u> - N2b (M), <u>sand over mottled saline waterlogged clay</u> - N2a (M) and <u>wet saline clay over sand</u> - N2c (M) in swamps.</p> <p>Key properties:</p> <p>Drainage: Well drained to poorly drained in swampy depressions.</p> <p>Fertility: Moderately low to low.</p> <p>Physical condition: No limitations to root growth.</p> <p>AWHC: Moderate.</p> <p>Salinity: Moderately low.</p> <p>Erosion potential: Water: Low Wind: Moderately low.</p> <p>Water repellence: Moderately low.</p> <p>Rockiness: Less than 5% surface calcrete.</p> <p><u>Summary:</u> These depressions are limited in extent but have reasonable pasture production potential provided fertility is maintained.</p>



ZnO	1.2	Depressions with extensive swampy areas.
ZpO	4.7	ZnO Depressions with 20-50% swampy areas and up to 10% stony rises.
ZpP	0.5	ZpO Depressions with more than 50% swampy areas and up to 10% stony rises. ZpP Depressions with a complex of stony rises and swampy depressions in an approximate ratio of 50:50.
Main soils: <u>sand over mottled saline waterlogged clay</u> - N2a (E-C), <u>wet saline calcareous loam</u> - N2b (C-L), and <u>wet saline clay over sand</u> - N2c (C-L), with <u>shallow stony loamy sand over calcrete</u> - B3 (M-C) and <u>loamy sand over sandy clay loam on calcrete</u> - B7 (M-C) on rises.		
Key properties:		
Drainage: Depressions - imperfectly to poorly drained. Rises - well drained.		
Fertility: Low.		
Physical condition: No soil physical impediments to root growth.		
AWHC: Moderately low to low.		
Salinity: Depressions - moderately high to very high. Rises - low.		
Erosion potential: Water: Low to moderately low. Wind: Low.		
Water repellence: Low to moderate (rises).		
Rockiness: Nil to minor on flats. Up to 20% surface calcrete on rises.		
<u>Summary</u> : Impeded drainage and increasing salinity limit the productivity of these areas. Improvements can be achieved through the establishment of salt tolerant pastures.		

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:*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.
- B7** Loamy sand over sandy clay loam on calcrete (Petrocalcic, Brown Chromosol / Kandosol)
Medium to thick loamy sand with a bleached A2 layer abruptly overlying a brownish friable light sandy clay loam to sandy clay over calcreted calcarenite.
- H3** Deep bleached sand (Basic, Arenic, Bleached-Orthic Tenosol)
Thick to very thick bleached sand, organically darkened at the surface over yellow sand continuing below 100 cm.
- G2** Sand over light sandy clay loam (Petrocalcic, Brown Kandosol / Sodosol)
Thick to very thick sand with a bleached A2 layer overlying a yellowish brown light sandy clay loam with calcrete at variable depth.

Swampy depressions

- N2a** Sand over mottled saline waterlogged clay (Hypercalcic / Lithocalcic, Grey Sodosol)
Medium thickness loamy sand abruptly overlying a grey and yellow brown mottled clay (seasonally saturated), with rubbly to soft carbonate at depth.
- N2b** Wet saline calcareous loam (Calcarosolic, Hypersalic Hydrosol)
Grey very highly calcareous loam grading to a pale grey clay loam over a white very highly calcareous silty clay loam by about 30 cm, with a water table within 100 cm.
- N2c** Wet saline clay over sand (Petrocalcic, Calcarosolic, Salic Hydrosol)
Thin highly calcareous dark clay over a very highly calcareous pale mottled clayey sand with sporadic weak calcrete pans and water table within 100 cm.

Well drained depressions

- G3** Deep bleached sand (Eutrophic / Lithocalcic, Brown Chromosol)
Thick to very thick bleached sand to loamy sand with an organically darkened surface abruptly overlying a friable yellowish brown and red sandy clay, with or without soft or rubbly carbonate accumulations.
- H3/G2** Sand over sandy clay loam (Bleached, Petrocalcic, Brown Chromosol)
Thick to very thick (may be more than 100 cm) sand with a bleached A2 layer abruptly overlying a brown sandy clay loam with soft to rubbly carbonate at depth.

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

