

# PAW Para Wurlie Land System

Mostly level to gently undulating stony plains, with low lying plains and some rises

**Area:** 128.0 km<sup>2</sup>

**Landscape:** Mostly gently undulating plains, with low lying areas and some rises (mostly low rises). The system is dominated by soils underlain by calcrete, with many surface outcrops. Soils are highly calcareous, with the majority dominated by carbonate particles. Soils tend to be loams and fine sandy loams. Many relict jumbled dunes exist, and these are dominated by very shallow soils on calcrete and calcrete outcrops. Most of the system was covered by carbonate sand in recent geological times; however, most of the sand has since blown away, leaving behind calcreted calcarenite.

**Annual rainfall:** 415 – 480 mm average

**Main soils:** **B1** *Shallow highly calcareous loams on calcrete* [Supravescent Petrocalcic Calcarosol]  
**B2** *Shallow calcareous loams on calcrete* [Hypervescent Petrocalcic Calcarosol]

**Minor soils:** **A4** *Calcareous loams* [Hypervescent Hypercalcic-Lithocalcic Calcarosol]  
**A1** *Highly calcareous loams* [Supravescent Hypercalcic-Lithocalcic Calcarosol]

**Main features:** Most soils are highly calcareous, being dominated by carbonate particles, and are mostly loamy. Most soils are shallow or very shallow. There are many patches where soils are too shallow to be cropped. Nutrient imbalances caused by the high fine carbonate contents occur, particularly with manganese, phosphorus and zinc. Raised subsoil salinity levels are common, especially on low lying areas, however, very few areas have marginal salinity or more. High levels of the toxic elements boron and sodium are likely to occur in lower subsoils and under calcrete layers. Most surface soils have potential for wind erosion; and water repellent surface soils commonly occur.

## Soil Landscape Unit summary: Para Wurlie Land System (PAW)

SLU	% of area	Main features #
QHA	9.7	Dominantly shallow highly calcareous loams and sandy loams on calcrete.
QHA1	28.4	Main soils: <i>shallow highly calcareous loam to sandy loam on calcrete</i> (soil <b>B1-B2</b> ). With minor areas of <i>deep rubbly highly calcareous loam to sandy loam</i> (soil <b>A4-A1</b> ) or <i>calcareous gradational clay loams</i> (soil <b>A6</b> ), especially in low lying areas.
QHAz	0.5	
QHB	1.4	
QHB1	1.4	
QHO	1.0	
QHO1	1.5	<i>Plains, slopes and rises:</i> <b>QHA</b> – mostly arable stony level to gently undulating plains and very low rises (slopes 0-1.5%, 2s, 2-10% outcrop, 4r, 2a). <b>QHA1</b> – mostly non-arable very stony level to gently undulating plains and very low rises (slopes 0-1%, 2s, 5-4r, 2-1a). <b>QHAz</b> – mostly non-arable very stony somewhat raised plains and low rises (slopes 0-1%, 2-1s, 5-4r, 2-1a). <b>QHB</b> – mostly arable stony low rises, rises, and slopes (slopes 1-2.5%, 2-1s, 2-1e, 2-10% outcrop, 4r, 2a). <b>QHB1</b> – mostly non-arable very stony low rises, rises, and slopes (slopes 1-2.5%, 2-1s, 2-1e, 5-4r, 2-1a).
QHT	0.03	



		<p><i>Low lying plains and depressions:</i></p> <p><b>QHO</b> – semi arable stony relatively low lying plains with some saline seepage (slopes &lt;1%, 3-2s, 2-20% outcrop, 4r, 2a).</p> <p><b>QHO1</b> – mostly non arable very stony relatively low lying plains with some saline seepage (slopes &lt;1%, 3-2s, 5-4r, 2-1a).</p> <p><b>QHT</b> – depression with marginal salinity (slopes &lt;1%, 4s, 4r, 2-1a, 2w)</p>
QLA QLAr QLO QLOw	9.9 36.5 9.4 0.3	<p>Mostly shallow highly calcareous loams and sandy loams on calcrete.</p> <p>Main soils: <i>shallow highly calcareous loam to sandy loam on calcrete</i> (soil <b>B1-B2</b>). With some <i>deep rubbly highly calcareous loam to sandy loam</i> (soil <b>A4-A1</b>). Minor areas of <i>calcareous gradational clay loams</i> (soil <b>A6</b>) may occur in low lying areas.</p> <p><i>Plains:</i></p> <p><b>QLA</b> – arable level to gently undulating somewhat raised plains (slopes 0-1.5%, 2-1s, 3r, 2-3a).</p> <p><b>QLAr</b> – mostly arable stony level to gently undulating plains and low rises (slopes 0-1.5%, 2s, 5-10% outcrop, 4-3r, 2a).</p> <p><i>Low lying plains and depressions:</i></p> <p><b>QLO</b> – mostly arable stony relatively low lying plains/depressions with some saline seepage (slopes &lt;1%, 3-2s, 0-10% outcrop, 3-4r, 2-1a).</p> <p><b>QLOw</b> – wetter low lying plains with some saline seepage: includes Wurlie Swamp (slopes &lt;1%, 3-2s, 3-4r, 2-1a, 2w).</p>
MaYA	0.04	<p>Old coastal dune with dominantly shallow highly calcareous sandy loams on calcrete.</p> <p>Main soils: <i>shallow highly calcareous sandy loam on calcrete</i> (soil <b>B1-B2</b>).</p> <p><b>MaYA</b> – old low coastal dune (slopes 0-2%, 2s, 5r, 2-1a).</p>
ZA-	0.1	<p>Saline depression: an ancient back-swamp (slopes &lt;1%, 5-4s, 3-4w, 2-1a).</p> <p>Main soils: salinised <b>B2</b>, <b>A4</b>, and <b>A6</b> soils.</p>

# 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:

- B1** *Shallow highly calcareous loams on calcrete* [Supravescent Petrocalcic Calcarosol]  
A very highly to highly calcareous grey loam or fine sandy loam, or occasionally fine loamy sand, which is dominated by carbonate particles, and overlies calcrete at shallow to very shallow depth. Surface soils typically have a loose consistency. Hard carbonate rubble commonly occurs in the profile. This soil is occasionally overlain by a thin layer of shelly loamy sand in the west of the system. Surface soils are commonly water repellent. Found on old relict low dunes, and on plains and low rises, and in low lying areas.
- B2** *Shallow calcareous loams on calcrete* [Hypervescent Petrocalcic Calcarosol]  
A highly to moderately calcareous grey to brown loam or fine sandy loam which is dominated by siliceous particles. The soil is underlain by calcrete at shallow to very shallow depth. Surface soils can have a loose consistency. Clay loamy subsoil textures sometimes occur, especially in deeper variants. Hard carbonate rubble commonly occurs in the profile. Found on plains and low rises, in low lying areas, and on old relict low dunes.



**Minor soils:**

- A4** *Calcareous loams* [Hypervescent Hypercalcic-Lithocalcic Calcarosol]  
A deeper variant of a **B2** soil. Calcareous grey to brown loam or fine sandy loam, or occasionally fine loamy sand, grading to loamy or clay loamy subsoil textures. Siliceous particles dominate the soil. Surface soils can have a loose consistency. The profile can contain various amounts of hard carbonate rubble, or is occasionally underlain by calcrete at moderate depth.
- A1** *Highly calcareous loams* [Supravescent Hypercalcic-Lithocalcic Calcarosol]  
A deeper variant of a **B1** soil. Very highly calcareous to calcareous grey and powdery loam or fine sandy loam grading to loamy or clay loamy subsoil textures. Surface soils typically have a loose consistency. Carbonate particles dominate the soil. The profile can contain various amounts of hard carbonate rubble, or is occasionally underlain by calcrete at moderate depth. Surface soils are commonly water repellent.

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

