

# PNG Penong Land System

- Area:** 692.4 km<sup>2</sup>
- Landscape:** Very gently undulating plains and rises on Ripon / Bakara Calcrete, largely covered by highly calcareous silty sands of the Woorinen Formation.
- Annual rainfall:** 290 – 315 mm average
- Main soils:**
- Bookabie (rubbly / non rubbly) - **A4a / A4b** (Regolithic, Hypercalcic / Lithocalcic Calcarosol)  
Calcareous soft sandy loam to sandy clay loam, becoming more clayey and calcareous with depth, over Class III A, B or C fine to rubbly carbonate in a sandy clay loam to light clay matrix, from about 40 cm.
- Penong - **A1a** (Hypervescent, Regolithic, Hypercalcic / Supracalcic Calcarosol)  
Highly calcareous loam becoming more clayey and calcareous with depth, grading to more than 50% fine or rubbly carbonate in a sandy clay loam matrix.
- Chintumba - **B1** (Hypervescent, Petrocalcic, Lithocalcic Calcarosol)  
Medium thickness highly calcareous sandy loam to sandy clay loam containing increasing amounts of rubble with depth, over sheet calcrete within 50 cm.
- Minor soils:**
- Nundroo - **B2/A4** (Hypervescent, Petrocalcic, Hypercalcic Calcarosol)  
Highly calcareous reddish clay loam grading to a very highly calcareous yellowish red light clay over rubbly or more commonly sheet calcrete within 75 cm.
- Magnesia - **A4c** (Epihypersodic, Supracalcic, Regolithic Calcarosol)  
Calcareous sandy loam to sandy clay loam, becoming more clayey and rubbly with depth. Saline throughout.
- Wookata - **A1b** (Supravescent, Hypercalcic / Lithocalcic Calcarosol)  
Very highly calcareous (more than 40% CaCO<sub>3</sub>) soft loamy sand to sandy loam grading to very highly calcareous sandy loam with variable rubble content.
- Wookata (shallow) - **A1/B1** (Supravescent, Petrocalcic, Hypercalcic / Lithocalcic Calcarosol)  
Very highly calcareous (more than 40% CaCO<sub>3</sub>) soft loamy sand to sandy loam grading to very highly calcareous sandy loam with variable rubble content, over calcrete at about 40 cm.
- Summary:** Very gently undulating plains and rises with mainly calcareous sandy loams. The majority are moderately deep and fertile although subsoil boron and salt limit productive potential. They have moderate wind erosion potential. Associated soils are shallow calcareous sandy loams with extensive surface stone and some sheet rock. These soils are only semi arable with slight wind erosion potential. There are sporadic magnesia patches throughout.



**Soil Landscape Unit summary:** 7 Soil Landscape Units (SLUs) mapped in the Penong Land System:

SLU	% of area	Component	Main soils	Prop#	Notes
IUU	4.3	Flats and depressions with 10-50% magnesia patches	Nundroo	V	Clayey flats with variable salinity (and extensive magnesia patches), and high boron - non arable.
			Magnesia	C	
QHA	2.6	Stony flats	Chintumba	D	Stony flats and rises - semi arable with sporadic magnesia patches.
QHB	4.8	Stony rises	Chintumba	D	
SMB	8.6	Sandy loam rises	Bookabie / Penong	D	Flats and rises formed on Ripon / Bakara calcrete overlain by Woorinen Formation materials. Soil are calcareous sandy loams, (moderately deep - Bookabie or shallow - Chintumba). <u>Bookabie:</u> Moderate fertility calcareous sandy loam with moderate subsoil boron and salt. Slight wind erosion potential. <u>Penong:</u> Moderately low fertility highly calcareous sandy loam with moderate to high subsoil boron and salt. Slight wind erosion potential. <u>Chintumba:</u> Very shallow, restricted waterholding capacity, extensive surface stone, often semi arable. There are sporadic magnesia patches throughout.
SzA	63.3	Sandy loam flats Stony flats	Bookabie / Penong	V	
			Chintumba	E	
SzB	15.6	Sandy loam rises	Bookabie/ Penong	V	
		Stony rises	Chintumba	E	
YEL	0.8	Sandy loam flats	Wookata	V	Flats formed on Woorinen Formation materials with highly calcareous sandy loams. Main factors affecting productivity are wind erosion potential, marginal fertility and limited waterholding capacity
		Stony flats	Shallow Wookata	C	

# PROPORTION codes assigned to Soil Landscape Unit (SLU) components:

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)

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

