

# YYK Yaranyacka Land System

**Area:** 190.1 km<sup>2</sup>

**Landscape:** Gently undulating rises formed on Tertiary sediments capped by Woorinen Formation carbonates, and gently sloping outwash fans formed on Pooraka Formation. Drainage depressions flowing across the fans are usually saline. There are occasional outcrops of Ripon / Bakara Calcrete. Adjacent to the coast are dunes and backswamps.

**Annual rainfall:** 325 - 375 mm average

**Main soils:** Wiabuna (rubbly) - **A4** (Regolithic, Lithocalcic / Supracalcic Calcarosol)  
Calcareous sandy loam to sandy clay loam grading to carbonate rubble.  
Tumby - **A5** (Epihypersodic, Hypercalcic Calcarosol)  
Calcareous clay loam grading to Class I carbonate merging with alluvial clay within 100 cm.  
Saline soil - **N2b** (Salic / Hypersalic Hydrosol)  
Miscellaneous wet saline soil influenced by rising saline groundwater tables.

**Minor soils:** Wharminda - **G4** (Hypercalcic, Brown Sodosol)  
Medium to thick sand with a bleached A2 layer abruptly overlying a hard columnar structured dispersive brown mottled clay, highly calcareous with depth, grading to alluvial or Tertiary sediments.  
Yamba - **N2a** (Hypersalic Hydrosol)  
Variable highly saline sand and clay of coastal flats and swamps.  
Calcareous loam - **A3** (Hypercalcic / Lithocalcic Calcarosol)  
Calcareous loam grading to a highly calcareous clay loam over Class III A, B or C carbonate merging with alluvial sediments.  
Red brown earth (sodic) - **D3** (Calcic, Red Sodosol)  
Medium to thick hard loam with a massive sandy clay loam A2 layer, over a weakly prismatic red clay, moderately calcareous with depth, grading to alluvial sediments.  
Semaphore - **H1/H3** (Shelly Rudosol)  
Very thick sand comprising mixed shell and quartz grains.  
Calcrete / Terre - **B2/B3** (Petrocalcic, Leptic Tenosol / Petrocalcic Calcarosol)  
Thin to medium thickness red sandy loam to clay loam, calcareous (**B2**) or non calcareous (**B3**), over sheet calcrete.  
Russell - **B1** (Supravесcent, Petrocalcic, Lithocalcic Calcarosol)  
Medium thickness highly calcareous loamy sand to sandy loam containing increasing amounts of rubble with depth, over sheet calcrete at less than 50 cm.

**Summary:** Gentle rises and slopes of mainly calcareous sandy loams. These are moderately deep, inherently fertile with slight susceptibility to wind and water erosion. Associated soils are loam to clay loam over red clay. These are fertile and deep with high productive potential. There are sporadic saline areas throughout, and drainage depressions are particularly saline.



**Soil Landscape Unit summary:** 16 Soil Landscape Units (SLUs) are mapped in the Yaranyacka Land System

SLU	% of area	Component	Main soils	Prop#	Notes
GFA	8.3	Sandy low rises	Wharminda	V	Coastal land where siliceous sands have accumulated on Bridgewater Calcarenites. <u>Wharminda</u> : Low fertility sandy soil with poorly structured subsoil (waterlogging, poor root growth), moderate wind erosion potential, water repellent.
		Sandy loam low rises	Wiabuna	E	
GFAa	0.4	Exposed sandy low rises	Wharminda	D	<u>Wiabuna</u> : Moderately fertile calcareous sandy loam with slight wind erosion potential.
IeB	56.2	Gently undulating rises	Wiabuna	V	Rises on Tertiary sediments veneered by Woorinen carbonates. Moderately fertile calcareous sandy loam with slight wind erosion potential, and minor salinity.
			Tumby	C	
IeC	6.5	Undulating rises	Wiabuna	V	
			Tumby	C	
JKK	3.1	Flats with more than 10% salt affected land	RBE / Calc loam / Tumby	D	Fans and flats on Pooraka sediments, with significant salt affected land. Soils are deep and fertile: <u>RBE</u> : Sandy loam over red clay. Fertile, deep, moderately well drained.
KHB	0.7	Very gentle slopes with up to 2% salt affected land	Calc loam / RBE / Tumby	D	<u>Calc loam</u> : Deep, fertile, well drained.
KHL	1.0	Very gentle slopes with 2-10% salt affected land	Calc loam / RBE / Tumby	D	<u>Tumby</u> : Moderately deep, highly calcareous at shallow depth - restricted root growth
KHM	4.3	Gentle slopes with 2-10% salt affected land	Calc loam / RBE / Tumby	D	
MdB	1.0	Stony coastal rises	Russell	V	Exposed Bridgewater with shallow stony soils and deep sands - little agricultural value.
		Coastal sand spreads	Semaphore	C	
QMB	1.2	Stony rises	Calcrete / Terre	D	Shallow stony non arable soils on Ripon/Bakara calcrete.
WFE	1.9	Low coastal dunes	Semaphore	D	Coastal strip with dunes and backswamps - no agricultural value.
WFH	0.3	Moderate coastal dunes	Semaphore	E	
		Salt flats	Yamba	E	
WO-	4.1	Salt flats	Yamba	D	
ZA-	7.7	Saline flats	Saline soil	D	Salt affected flats - non arable, but with scope for establishment of salt tolerant pasture / fodder plants, especially on <b>ZA-</b> .
ZB-	0.9	Highly saline flats	Saline soil	D	
ZC-	2.4	Extremely saline flats	Saline soil	D	

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

- |   |  |   |                                   |
|---|--|---|-----------------------------------|
| 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)     |

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

