TUF Tumby Flats Land System

Area: 142.3 km²

Landscape: Gently inclined to flat outwash fans between the eastern edge of the Koppio Hills and the

sea. Most of the land is underlain by alluvial sediments (Pooraka Formation), but in places highly calcareous Woorinen Formation sediments protrude through the sedimentary cover. These are probably underlain by Ripon/Bakara Calcrete. Along the coastline are modern dunes (Semaphore Sand), backswamps (Yamba Formation), and calcarenites (cemented dune sands of the Bridgewater Formation). These are covered in places by windblown

siliceous sands.

Annual rainfall: 325 - 375 mm average

Main soils: 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.

Wiabuna (flats) - **A4a** (Regolithic, Lithocalcic / Supracalcic Calcarosol)

Calcareous sandy loam to sandy clay loam grading to carbonate rubble.

<u>Alluvial soil</u> - **M4** (Eutrophic, Red Kandosol)

Medium to thick sandy loam grading to a red sandy clay loam to clay, becoming sandier

with depth.

<u>Yamba</u> - **N2** <u>(Hypersalic Hydrosol)</u>

Variable highly saline sand and clay of coastal flats and swamps.

Minor soils: Semaphore - H1/H3 (Shelly Rudosol)

Very thick sand comprising mixed shell and quartz grains.

Russell - **B1** (Supravescent, 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.

<u>Wharminda</u> - **G4** <u>(Hypercalcic, Brown Sodosol)</u>

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

Calcareous sandy loam to sandy clay loam, becoming more clayey and rubbly with depth.

or Tertiary sediments.

<u>Wiabuna (rises)</u> - **A4b** <u>(Regolithic, Lithocalcic / Supracalcic Calcarosol)</u> Calcareous sandy loam to sandy clay loam grading to carbonate rubble.

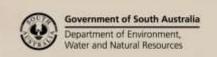
Magnesia soil - A4c (Epihypersodic, Supracalcic, Regolithic Calcarosol)

Saline throughout.

Summary: Gently inclined outwash fans dominated by deep loam over red clay soils, and calcareous

sandy loams. These soils are deep, moderately to highly fertile and well drained. However, a significant proportion of the land is affected by salinity, and most is slightly to moderately susceptible to both wind and water erosion. The coastal strip includes fragile dunes and

saline backswamps of high conservation value.





Soil Landscape Unit summary: 14 Soil Landscape Units (SLUs) mapped in the Tumby Flats Land System

SLU	% of area	Component	Main soils	Prop#	Notes
GFA	1.9	Low sandy rises	Wharminda	V	Coastal land where siliceous sands have
		Low sandy loam	Wiabuna (rises)	Е	accumulated on Bridgewater Calcarenites.
		rises			Wharminda: Low fertility sandy soil with poorly
					structured subsoil (waterlogging, poor
					root growth), moderate wind erosion
					potential, water repellent.
					<u>Wiabuna</u> : Moderately fertile calcareous sandy
					loam with slight wind erosion potential.
JFB	60.7	Very gentle slopes	RBE / Wiabuna /	D	Fans and flats formed on Pooraka sediments.
			Alluvial soil		Water erosion potential nil to moderate, slight
JFC	5.0	Gentle slopes	RBE / Wiabuna /	D	wind erosion potential. Sporadic salt affected land
****			Alluvial soil	_	throughout (seepage and magnesia), more in JFK
JFJ	0.2	Eroded watercourses	RBE / Wiabuna /	D	and JFT.
IEIZ	0.7	El . ' 2 100/	Alluvial soil		RBE: Deep, fertile, well drained loam over red
JFK	9.7	Flats with 2-10% salt	RBE / Wiabuna /	D	clay <u>Wiabuna (flats)</u> : Moderately fertile calcareous
IDT	0.0	affected land	Alluvial soil	D	sandy loam with slight wind erosion
JFT	0.8	Flats with 10-20% salt affected land	RBE / Wiabuna / Alluvial soil	ט	potential.
		Sait affected fand	Alluviai soli		Alluvial soil: Deep and fertile, but prone to salinity.
MdB	2.2	Stony rises	Russell	D	Shallow stony loamy sand on Bridgewater
		,			calcarenite. Non arable.
SDB	1.1	Sandy loam rises	Wiabuna (rises)	D	Calcareous sandy loam - outlier of Yaranyacka
			Magnesia soil	М	System.
			_		Wiabuna: Moderately fertile calcareous sandy loam
					with slight wind erosion potential.
WFE	3.7	Low coastal dunes	Semaphore	D	Coastal landscapes of highly infertile and wind
WFe	0.7	Low bare coastal	Semaphore	D	erosion prone dunes, with highly saline
		dunes			backswamps. Non arable and of little grazing value
WO-	4.3	Saline back swamp	Yamba	D	- conservation areas.
WR-	5.2	Saline back swamp	Yamba	V	
		Low coastal dunes	Semaphore	L	
ZA-	3.9	Saline flats	Saline soil	D	ZA- is non arable, but suitable for salt tolerant
7.0	0.0	Tradata and Ori	Calling and		pasture and fodder plants.
ZC-	0.6	Highly saline flats	Saline soil	D	ZC- is highly saline and with low productive
					potential.

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

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: <u>DEWNR Soil and Land Program</u>

