

DEEP HIGHLY LEACHED SAND

General Description: *Deep bleached sand, organically darkened at the surface.*

Landform: Very gently undulating swampy plain with better drained very low rises.

Substrate: Windblown sand.

Vegetation:



Type Site:	Site No.:	SE174	1:50,000 mapsheet:	7022-2 (Gambier)
	Hundred:	Gambier	Easting:	492110
	Section:		Northing:	5821800
	Sampling date:	12/12/2012	Annual rainfall:	745 mm average

Very low rise on very gently undulating swampy plain, less than 1% slope. Soft surface with no stones.

Soil Description:

Depth (cm)	Description
0-20	Greyish brown soft single grain loamy sand. Clear to:
20-50	Light grey (bleached when dry) soft single grain sand. Diffuse to:
50-90	Light grey (bleached when dry) soft single grain sand. Diffuse to:
90-140	White soft single grain sand.



Classification: Basic, Arenic, Bleached-Orthic Tenosol; medium, non-gravelly, sandy / sandy, deep



Summary of Properties

Drainage: Rapidly (excessively) drained. No part of the profile is likely to remain wet for more than a few hours at a time following heavy or prolonged rainfall.

Fertility: Inherent fertility is very low, as indicated by the exchangeable cation data. The sandy surface soil, with high organic carbon levels, has some nutrient retention capacity, but below 20 cm, capacity is extremely low. Nevertheless, test data indicate only marginal deficiencies of potassium, nitrogen and sulphur, with other elements in adequate supply at the surface.

pH: Acidic throughout. Note that the surface of the delved soil is more acidic than the undelved soil.

Rooting depth: Not recorded – estimate that most root growth occurs in the upper 50 cm.

Barriers to root growth:

Physical: There are no physical barriers.

Chemical: Low nutrient retention capacity, exacerbated by low pH and associated aluminium toxicity and nutrient leaching, affects root growth in all subsurface layers.

Waterholding capacity: Approximately 40 mm in the estimated potential rootzone.

Seedling emergence: Satisfactory, except where water repellent

Workability: The sandy surface soil is readily worked, but over-working creates wind erosion hazard.

Erosion Potential

Water: Low.

Wind: Moderately low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	Ext. Al mg/kg	EC 1:5 dS/m	Cl mg/kg	Org.C %	NO ₃ + NH ₄ mg/kg	Avail. P mg/kg	PBI	Avail. K mg/kg	SO ₄ -S mg/kg	Boron mg/kg	Trace elements mg/kg (DTPA)				Sum cations cmol (+)/kg	Exchangeable cations cmol(+)/kg				ESP
													Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock delved	5.5	4.9	-	0.14	20	1.86	65	40	14	69	6.6	0.3	0.92	83	4.87	4.12	4.9	3.85	0.77	0.09	0.18	1.8
Paddock undelved	6.6	5.8	-	0.07	16	1.93	22	27	13	51	6.1	0.3	0.81	42	1.61	4.38	6.6	5.51	0.91	0.13	0.09	2.0
0-20	6.7	6.1	0.77	0.06	13	1.01	15	22	15	38	3.4	0.4	1.02	55	3.24	4.41	5.1	4.09	0.85	0.09	0.07	1.8
20-50	6.2	5.5	0.69	0.02	4	0.25	5	11	6	20	1.1	0.2	0.37	59	1.35	1.35	1.3	1.05	0.21	0.02	0.03	na
50-90	6.1	5.4	0.7	0.01	1	0.06	1	9	6	10	0.7	0.05	0.32	27	0.77	0.8	0.4	0.30	0.08	0.01	0.01	na
90-140	6.5	5.9	0.28	0.01	1	0.07	1	4	5	16	0.8	0.05	0.31	7	0.11	0.73	0.5	0.43	0.08	0.01	0.02	na

Note: Paddock sample bulked from cores (0-10 cm). Samples are from a delved section of paddock, and an undelved section – the soil pit is undelved.

Sum of cations, in a neutral to alkaline soil, approximates the CEC (cation exchange capacity), a measure of the soil's capacity to store and release major nutrient elements.

ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the CEC, in this case estimated by the sum of cations.

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

