

SALINE PEAT

General Description: *Black hemic peat gradually becoming more fibrous and saline with depth*

Landform: Sub-coastal swamp

Substrate: Decayed organic matter

Vegetation: -

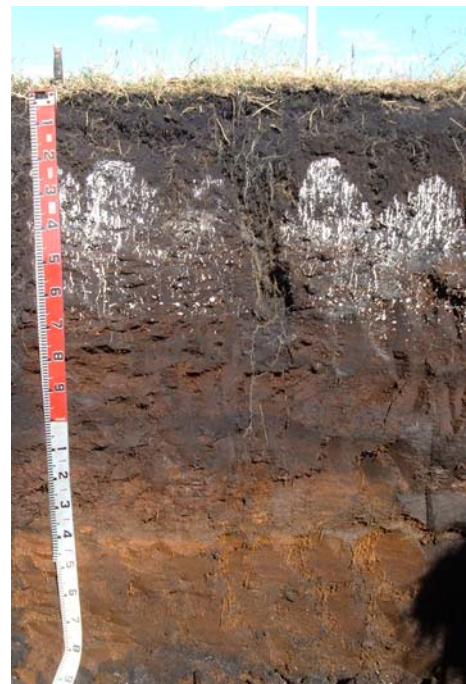


Type Site: Site No.: SE083

1:50,000 sheet:	6922-1 (Millicent)	Hundred:	Mayurra
Annual rainfall:	725 mm	Sampling date:	29/09/04
Landform:	Swamp on landward side of old coastal range		
Surface:	Soft peat with no stones		

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-5	Black friable fibric peat with weak platy breaking to weak granular structure and 2-10% shells. Sharp to:
5-15	Black firm hemic peat with weak granular structure and 2-10% charcoal fragments (6-20 mm). Clear to:
15-30	Black hard apedal hemic peat with 20-50% charcoal fragments (6-20 mm). Abrupt to:
30-55	Black hard apedal hemic peat with 20-50% charcoal fragments (6-20 mm), coated by fine ash (10-20%). Gradual to:
55-75	Black hard apedal hemic peat with 20-50% charcoal fragments (6-20 mm), coated by fine ash (2-10%). Clear to:
75-120	Very dark brown and dark yellowish brown mottled firm fibric peat with minor ash coatings. Diffuse to:
120-190	Dark yellowish brown and dark brown mottled firm fibric peat.



Classification: Ashy, Basic, Hemic, Organosol: very thick

Summary of Properties

- Drainage:** Very poorly drained. Soil is wet for most of the time, and the land is inundated for several months.
- Fertility:** Inherent fertility is high, with very high organic matter responsible for high sum of cations. Phosphorus levels are low, potassium is satisfactory. Sulphate levels are high (due to high organic matter content). Trace element concentrations are adequate.
- pH:** Slightly alkaline at the surface (due to dust accession), becoming moderately acidic with depth.
- Rooting depth:** Dependent on seasonal salt movement, but roots avoid high salinity below 50 cm.
- Barriers to root growth:**
- Physical:** Weak pan at 40 cm may restrict some plant roots.
 - Chemical:** Moderately high boron levels associated with saline water in lower profile. As the profile dries out in summer, the salinity and boron will increase in the upper profile. Boron will tend to be less mobile on re-wetting of the profile.
- Water holding capacity:** Approximately 90 mm in top 50 cm.
- Seedling emergence:** No mechanical constraint - very friable soft surface.
- Workability:** Soil is easily worked, the main constraint being poor machinery access due to boggy conditions and flooding for several months.

Erosion Potential

- Water:** Low
- Wind:** Low

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC 1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	Cl mg/kg	SO ₄ -S mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est. ESP
												Cu	Fe	Zn	Mn		Ca	Mg	Na	K	
0-5	7.4	7.2	7.0 [^]	1.67	4.66	51.2	94	856	1100	536	4.2	6.0	246	11.6	16.1	131	108	17.3	3.68	2.06	2.8
5-15	6.7	6.5	1.0	1.62	6.35	55.7	29	194	1749	855	5.3	4.1	288	14.6	11.2	148	119	22.8	5.45	0.43	3.7
15-30	5.9	5.8	0	1.21	3.78	55.0	10	45	852	259	0.9	1.1	367	0.8	3.3	127	100	21.0	6.12	0.11	4.8
30-55	5.3	5.2	0	5.87	16.14	33.2	6	23	5153	6855	1.6	1.5	121	0.9	3.3	199	140	38.6	20.6	0.03	10.3
55-75	5.1	5	0	6.34	21.50	40.1	4	16	6380	6535	12.7	1.1	74	1.0	3.1	176	123	31.0	21.6	0.02	12.3
75-120	5.4	5.3	0	7.17	22.80	51.4	5	38	10254	2240	1.3	0.6	126	2.5	5.8	141	61.2	46.5	32.8	0.10	23.2
120-190	6.1	6	0	6.35	15.27	61.4	2	73	9456	918	0.8	0.8	52	4.0	5.8	83	42.7	21.9	18.4	0.17	22.1
Product*	7.3			1.6		43	<0.5		110	240	0.5	0.24	7.5	0.8	<0.1		290#	56#	130#	16#	

Note: 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, the sum of cations).

[^] Dust from adjacent calcareous rises

* Washed bulk sample

Data in mg/l