

BRY Bray Land System

- Area:** 36.7 km²
- Landscape:** Clayey flats and plains east of Lake Hawdon. The plains abut the Lake Hawdon saline lacustrine plains, but are mostly non-saline. They are slightly elevated above the lake level. Some areas are very shallow over calcreted lacustrine sediment or marl. Shallow swamps are also common. Soils are mostly shallow dark clays, often calcareous.
- Annual rainfall:** 655 – 695 mm average
- Geology:** Pleistocene coastal shelly calcareous clays of the Glanville Formation on flats, with Pleistocene Bridgewater Formation calcreted calcarenite stranded beach ridge deposits on ridges.
- Main soils:**
- B7** (28%) Shallow sand over clay on calcrete (sandy Petrocalcic Sodosol-Chromosol)
 - B2** (28%) Shallow calcareous loam on calcrete (Petrocalcic Calcarosol-Rudosol)
 - B8** (18%) Shallow bleached sand on calcrete (sandy Petrocalcic Rudosol-Tenosol)
- Minor soils:**
- N3** (8%) Wet soil (non to moderately saline) (Sodosolic-Calcarosolic-Dermosolic Hydrosol)
 - B5** (5%) Shallow dark clay loam on limestone (Petrocalcic Black-Grey Dermosol)
 - N1** (4%) Peaty soil (Organosol)
 - M2** (4%) Deep friable gradational clay loam (Red-Brown-Grey- Black Dermosol)
- Summary:** The shallowness of soil over calcrete determines the relatively low water holding capacity and also rockiness, which is a common problem affecting arability. Salinity is encountered in many of the swamps. Many of the clayey soils on the flats are also calcareous which limits their suitability for lime intolerant crops.

Soil Landscape Unit summary: Bray Land System (BRY)

SLU	% of area	Component	Main soils	Prop#	Notes
NBn	4.6	Undulating stony plain	B5B2	D	Gently undulating stony plains with shallow dark calcareous clay loam, often over clay, on calcrete. <10% swamps with saline wet clays; 10-30% non-saline clays; 10-30% shallow calcareous clay loam on calcrete. Main soils: Plains: <u>Shallow dark clay loam on limestone - B5</u> and <u>Shallow calcareous loam on calcrete - B2</u> . Swamps: <u>Wet saline clay loam - N2c</u> .
		Swamp	N2	M	
NMT	11.6	Swampy plain	B7	V	Swampy plains with shallow sand over grey-brown clay on calcrete. 10-20% sandy rises with sand over brown clay soils or with deep, bleached siliceous, water repellent sands. Main soils: Swampy plains: <u>Sand over friable brown clay on calcrete - B7</u> . Sandy rises: <u>Thick sand over clay - G3</u> , <u>Bleached siliceous sand - H3</u> and <u>Wet highly leached sand - I2</u> .
		Sandy rise	G3H3 I2	L	
NxJ	70.4	Plain	B2B7 B8	V	Plains with shallow calcareous sandy loam, often on bleached sand or poorly structured clay, on calcrete. 10-20% swamps with mostly non-saline, often wet, dark clay loam
		Swamp	N3N1	L	



			M2		over dark clay; or peat soils. 10-30% of swamp soils are moderately saline, or shallow over limestone/calcrete. Main soils: Plains: <u>Shallow calcareous loam on calcrete - B2</u> , <u>Sand over friable brown clay on calcrete - B7</u> and <u>Shallow sand on calcrete - B8</u> . Swamps: <u>Wet clay loam - N3</u> , <u>Peaty soil - N1</u> and <u>Deep friable gradational clay loam - M2</u> .
VeA	2.2	Plain	B5B2	D	Plain on southern margin of Lake Hawdon with shallow dark clay and calcareous clay loams on calcrete or limestone. Main soils: <u>Shallow dark clay loam on limestone - B5</u> and <u>Shallow calcareous loam on calcrete - B2</u> .
XRf	3.9	Swamp	N3	V	Swamps with wet dark clay loam soils. 10-30% peat; 10-30% deep, dark clay or gradational clay loam on clay. 10-20% stony rises with shallow dark sandy loam, often over dark clay, on calcrete; occasionally shallow loam on calcrete with thin red clayey subsoil or calcareous clay loam over clay on marl. Main soils: Swamps: <u>Wet clay loam - N3</u> . Stony rises: <u>Shallow dark clay loam on limestone - B5</u> and <u>Shallow calcareous loam on calcrete - B2</u> .
		Stony rise	B5B2	L	
Xtf	2.0	Swamp	B5N3	V	Swamps with shallow, often wet, clay loam grading to clay on calcrete. Minor peat soils. 20-30% rises with shallow calcareous loam or siliceous sand over calcrete; 10-30% bare calcrete. Main soils: Swamps: <u>Shallow dark clay loam on limestone - B5</u> and <u>Wet clay loam - N3</u> . Rises: <u>Shallow calcareous loam on calcrete - B2</u> and <u>Shallow sandy loam on calcrete - B3</u> .
		Rise	B2B3	C	
Xuf	3.2	Swamp	N3	V	Swamps with non-peaty wet soils, 10-30% water filled. 20-30% stony rises with shallow mostly calcareous, grey clay loam, often over dark grey clay, on calcrete. Main soils: Swamps: <u>Wet clay loam - N3</u> . Stony rises: <u>Shallow calcareous loam on calcrete - B2</u> , <u>Shallow sandy loam on calcrete - B3</u> and <u>Shallow dark clay loam on limestone - B5</u> .
		Stony rise	B2B3 B5	C	
ZD-	1.5	Salt lake	N2	D	Lake bed with bare salt crust. Highly saline clay loamy soils. 10-30% inundated. Main soils: <u>Wet saline clay loam - N2c</u> .
Zr-	0.5	Saline flat	N2A7	D	Bare salty flat with mostly wet & saline, dark calcareous clay loam on calcrete or marl; some wet soils are non-saline or marginally saline. Main soils: <u>Wet saline clay loam - N2c</u> and <u>Calcareous clay loam on marl - A7</u> .

PROPORTION codes assigned to components 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)



Detailed soil profile descriptions:

- A7** Calcareous clay loam on marl (Marly Calcarosol)
Dark calcareous clay with a marly subsoil (often saline in Upper SE). Often with shells and a peaty surface.
- B2** Shallow calcareous sandy loam on calcrete (Petrocalcic Calcarosol)
Up to 40 cm calcareous loamy sand to sandy loam with variable calcrete rubble overlying calcreted calcarenite - rises.
- B3** Shallow sandy loam on calcrete (Petrocalcic Rudosol)
Medium thickness non calcareous sandy loam, often having a slight clay increase with depth, over calcreted calcarenite shallower than 50 cm - rises.
- B5** Shallow dark clay loam on limestone (Petrocalcic, Black Dermosol)
Black clay loam to light clay over calcreted limestone at shallow depth, grading to highly calcareous clay - flats.
- B7** Shallow sand over sandy clay on calcrete (Petrocalcic, Brown Chromosol)
Medium thickness sand overlying brown friable sandy clay to clay on limestone or calcreted sandy clay within 50 cm - flats.
- B8** Shallow sand on calcrete (Petrocalcic, Bleached-Leptic Tenosol)
Thick bleached sand over calcreted calcarenite within 50 cm - rises.
- G3** Thick sand over clay (Hypercalcic, Brown Sodosol/ Chromosol)
Thick bleached sand with an organically darkened surface abruptly overlying a massive to coarsely structured brown to reddish yellow sandy clay to clay, calcareous with depth - rises.
- H3** Deep bleached sand (Basic, Arenic, Bleached-Orthic Tenosol)
Grey sand over a very thick bleached sand grading to yellow sand continuing below 100 cm.
- I2** Wet highly leached sand (Fragic, Humic, Aquic Podosol)
Grey sand with a thick bleached A2 horizon, overlying a thin to thick layer of coffee rock, grading to pale brown sand sharply overlying a grey, brown and yellow mottled sandy clay loam to light clay.
- M2** Deep friable gradational clay loam (Red-Brown-Grey- Black Dermosol)
Deep well structured red clay loamy soil.
- N1** Peat (Organosol)
Peaty soil
- N2c** Wet saline clay loam (Dermosolic, Salic Hydrosol)
Medium thickness dark grey to black clay loam to clay grading to well-structured dark grey clay with minor carbonates and a water table within 100 cm.
- N3** Seasonally waterlogged, non to marginally saline equivalents of soils listed above, viz.:
N3c Wet **G3**
N3d Wet **B5**
N3e Wet **B7**

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

