

BOG Bogalara Land System

Area:	56.3 km ²
Landscape:	Poorly drained, stony dune-corridor plains, north of the Reedy Creek to Avenue road. Low rises and swamps with associated lunettes are common. Salinity is moderate to low.
Annual rainfall:	595 – 625 mm average
Geology:	Pleistocene Padthaway Formation calcareous clays. Holocene lacustrine sediments have accumulated in places.
Main soils:	<p>B7 (25%) Shallow sand over clay on calcrete (sandy Petrocalcic Sodosol-Chromosol)</p> <p>C5 (19%) Gradational dark clay loam (Calcic-Hypercalcic Brown-Grey-Black Dermosol-Calcarosol)</p> <p>A7 (10%) Calcareous clay loam on marl (Marly Calcarosol)</p>
Minor soils:	<p>B5 (7%) Shallow dark clay loam on limestone (Petrocalcic Black-Grey Dermosol)</p> <p>B2 (7%) Shallow calcareous loam on calcrete (Petrocalcic Calcarosol-Rudosol)</p> <p>M2 (7%) Deep friable gradational clay loam (Red-Brown-Grey- Black Dermosol)</p> <p>N3 (7%) Wet soil (non to moderately saline) (Sodosolic-Calcarosolic-Dermosolic Hydrosol)</p> <p>G3 (4%) Thick sand over clay (sandy Brown-Red Chromosol-Sodosol)</p>
Summary:	The soils on the plains are prone to waterlogging and flooding unless drained. Shallow sand to clay loam over dark clay soils on calcrete (B7, B5) have low to moderate water holding capacity and restricted root depth and are the typical shallow soils of the plains. Deeper plains soils (C5, A7, M2) have greater moisture storage and root development potential. They also are relatively heavy textured and are fertile. Surface carbonates in some soils will restrict their use for lime-sensitive crops such as lupins.

Soil Landscape Unit summary: Bogalara Land System (BOG)

SLU	% of area	Component	Main soils	Prop#	Notes
NJF	12.9	Swampy plain	C5M2	D	Swampy plains with deep dark cracking clay or clay loam over dark poorly structured clay with variable amounts of carbonate. Main soils: <u>Gradational dark clay loam – C5</u> and <u>Deep friable gradational clay loam - M2</u> .
NKA	21.8	Plain	C5A7	D	NKA Plains with mostly deep, dark grey, cracking clay, over dark calcareous clay, but often calcareous grey clay on marl.
NKF	5.8	Gently undulating plain	F2M4	V	NKF Undulating plains with dark clay loam over poorly structured dark grey clay; 10-30% deep dark grey cracking clay, often shallow on calcrete. 20-30% swamps with wet soils as above and 10-30% peat. NKf Plains with variable salinity from moderately high to slight. Soils are shallow sandy loam over poorly structured brown clay on calcrete; 10-30% shallow clay loam over yellow-grey clay on calcrete. 10-20% swamps with mostly
		Swamp	N3	C	
NKf	14.4	Plain	B7	V	



		Swamp	N3M4	L	wet, deep clay loam over poorly structured dark clay; 10-30% shallow over calcrete. Main soils: Plains: <u>Gradational dark clay loam - C5</u> , <u>Sand over friable brown clay on calcrete - B7</u> and <u>Calcareous clay loam on marl - A7</u> . Swampy plains: <u>Sandy loam over poorly structured brown or dark clay - F2</u> and <u>Deep hard gradational sandy loam - M4</u> . Swamps: <u>Wet clay loam - N3</u> and <u>Deep hard gradational sandy loam - M4</u> .
NMI	24.5	Plain	B7	V	Plains with shallow sandy loam over poorly structured brown clay on calcrete; 10-30% deep sand over brown clay. 10-20% swamps with mostly wet, deep loamy sand over dark brown clay. <10% stony rises with shallow, dark, loamy sand over dark clay on calcrete; 10-30% shallow loam over thin to thick red clay on calcrete, or shallow bleached sand on calcrete. <10% sandy rises with deep sand, overlying brown clay, bleached sand, or organic pans. Main soils: Plains: <u>Sand over friable brown clay on calcrete - B7</u> Swamps: <u>Wet clay loam - N3</u> and <u>Deep friable gradational clay loam - M2</u> . Stony rises: <u>Shallow dark clay loam on limestone - B5</u> . Sandy rises: <u>Thick sand over clay - G3</u> , <u>Bleached siliceous sand - H3</u> and <u>Wet highly leached sand - I2</u> .
		Swamp	N3M2	L	
		Stony rise	B5	M	
		Sandy rise	G3H3 I2	M	
NxI	0.9	Stony plain	B5B2	V	NxI Stony plains with shallow dark loam over dark clay on calcrete, or calcareous loam on calcrete. 10-20% swamps with wet dark clay loam over dark clay; also 10-30% shallow calcareous clay loam on calcrete.
		Swamp	N3	C	
NxJ	10.3	Plain	B5B2	V	NxJ Plains, less stony but will similar soils to NxI , 20-30% swamps; <10% stony rises with shallow loam over calcareous clay loam on calcrete; 10-30% deeper loam over red clay 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 clay loam - N3</u> . Stony rises: <u>Shallow sandy loam on calcrete - B3</u> .
		Swamp	N3	C	
		Stony rise	B3	M	
Xc-A	1.9	Lunette	B2B3	D	Low lunettes with shallow calcareous loam over calcrete, or loam over thin red clay on calcrete. Main soils: <u>Shallow calcareous loam on calcrete - B2</u> and <u>Shallow sandy loam on calcrete - B3</u> .
Xc-B	3.2	Lunette	B2B3	D	Medium height lunettes as above. Main soils: <u>Shallow calcareous loam on calcrete - B2</u> and <u>Shallow sandy loam on calcrete - B3</u> .
XuX	4.3	Swamp	N2N3 B5	D	Swamps with wet, marginally saline and non saline, dark clay loam over dark clay, often shallow over calcrete. Main soils: <u>Wet saline clay loam - N2c</u> , <u>Wet clay loam - N3</u> and <u>Shallow dark clay loam on limestone - B5</u> .

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

- 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.
- C5** Gradational dark clay loam (Calcic-Hypercalcic Brown-Grey-Black Dermosol-Calcarosol)
Dark clay loam over abundant 'soft lime'. >10% carbonate is the cut off between this and M2 soils.
- F2** Sandy loam over poorly structured brown or dark clay (Brown-Dark Sodosol-Chromosol)
Topsoil <30 cm over a poorly structured subsoil. Loamy, often sandy loam, to clay loamy texture contrast soil with a sodic/dispersive/poorly structured brown clayey subsoil. Often sandy loam, usually with a bleached horizon, and thin topsoil over a poorly structured B.
- 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.
- M4** Deep hard gradational sandy loam (Hard Brown-Dark Kandosol- Dermosol)
Deep dark brown loamy to clay loamy soil grading to clay at depth. Hardsetting surface often with prismatic structures in the subsoil.
- 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](#)

