

# BPH Black Point Hill Land System

Narrow north-south range east of Snowtown

**Area:** 70.4 km<sup>2</sup>

**Annual rainfall** 365 – 450 mm average

**Geology:** Quartzite of the ABC Range Formation, most of which is covered by fine to rubbly carbonates of the Woorinen Formation. In places the Woorinen materials are underlain by clay deposits (Blanchetown Clay equivalent) possibly derived from the weathering of the quartzites. More recent drift sand (Molineaux Sand) has accumulated in a dune field on the western side of the range and in pockets elsewhere. A strip of Tertiary clay or alluvium derived from erosion of the quartzites occurs along the foot of the range on its eastern side.

**Topography:** The Land System is a well defined narrow north-south quartzite ridge. The quartzite is exposed along the spine of the ridge where slopes are as steep as 40%. Flanking the spine on both sides are much gentler slopes (2 - 10%) where the Woorinen Formation carbonates, Molineaux Sand and outwash alluvium have accumulated.

**Elevation:** The highest point on the ridge is Gleeson Hill (221 m). The lowest point is 70 m adjacent to the Everard depression on the eastern side.

**Relief:** Maximum relief is 130 m from the summit of Gleeson Hill to the foot of the fan to the east.

**Soils:** Calcareous and non calcareous gradational sandy loams to loams are predominant, with some deep sand, sandy loam over clay and shallow sandy loam over calcrete.

#### Main soils

**A4** Rubbly calcareous sandy loam - gentle slopes

**A5** Calcareous loam - mid slopes

#### Minor soils

**A2/B2** Shallow rubbly calcareous sandy loam - steeper ridges and upper slopes

**H2** Deep sand - sand dunes and spreads

**C3** Loam over red clay - upper slopes, low rises and swales

**C1** Sandy loam over red sandy clay - swales and lower slopes, some upper slopes

**B2** Shallow calcareous sandy loam on calcrete - stony rises

**A6/A5** Calcareous loam - lower slopes and fans

**Main features:** The Black Point Hill Land System is a quartzite ridge characterized by calcareous sandy loams formed on highly calcareous windblown sediments. Except for some steep rocky crests where the quartzite is exposed, the land is fully arable. On the main soil types, sub optimal fertility and water holding capacity are the main (although not major) limitations. There are minor areas of dune sand and shallow rubbly soils which have marginal cropping potential. There is potential for both water and wind erosion due to moderate slopes and low clay content soils.



**Soil Landscape Unit summary:** 10 Soil Landscape Units (SLUs) mapped in the Black Point Hill Land System:

SLU	% of area	Main features #
AUC	4.4	Moderately inclined to steep quartzite ridges, 20-30% slope to 60 m high, formed on ABC Range quartzite.  Main soil: <u>shallow rubbly calcareous sandy loam</u> - <b>A2/B2</b> (D) over quartzite. The land is non arable with a range of limitations including low soil moisture holding capacity and fertility, inaccessibility due to slope and rockiness, and erosion potential.
EAC EAD	1.8 2.9	Rises, slopes and ridges formed on ABC Range quartzite. There is up to 20% surface calcrete and quartzite stone. <b>EAC</b> Undulating to moderately inclined slopes of 5-12%. <b>EAD</b> Ridges and moderate slopes of 10-25%.  Main soils: <u>shallow rubbly calcareous sandy loam</u> - <b>A2/B2</b> (V) with <u>sandy loam over red sandy clay</u> - <b>C1</b> (C). The rises have variable depth soils which are often shallow and pose the main limitation to productivity. Fertility problems associated with the calcareous soils, and the abrasiveness of the surface quartzite are less significant limitations.
KLB	17.9	Gentle slopes of 2-5%, running along the lower eastern edge of the range and formed on fine to medium grained alluvium.  Main soils: <u>calcareous loam</u> - <b>A6/A5</b> (E) and <u>rubbly calcareous sandy loam</u> - <b>A4</b> (E) with <u>loam over red clay</u> - <b>C3</b> (L). The slopes are gentle and the soils are well drained. There are slight limitations due to fertility (caused by high pH of the calcareous soils), water holding capacity, boron toxicity and erosion potential.
QMB	0.8	Low rise with slopes of 2-3% and up to 20% surface cover of calcrete stones formed on sheet and rubbly calcrete of the Bakara and Woorinen Formations.  Main soils: <u>shallow calcareous sandy loam</u> - <b>B2</b> (E) and <u>rubbly calcareous sandy loam</u> - <b>A4</b> (E), over sheet calcrete or fine to rubbly Woorinen Formation carbonates, with <u>loam over red clay</u> - <b>C3</b> (L). The land is characterized by shallow stony soils and although deeper soils are interspersed amongst them, water holding capacity and workability problems are the most limiting features. Alkalinity and reduced fertility caused by the high carbonate contents of the soil also affect productivity.
SMB SMC SMH	32.4 22.9 6.5	Slopes formed on highly calcareous medium textured Woorinen Formation deposits with variable rubble contents. Blanchetown Clay equivalent may occur within a metre or two of the surface under the Woorinen deposits. <b>SMB</b> Very gentle slopes of 2-4%. <b>SMC</b> Slopes of 4-10%. <b>SMH</b> Slopes of 4-10% with well defined watercourses. Main soils: <u>rubbly calcareous sandy loam</u> - <b>A4</b> (V), with <u>calcareous loam</u> - <b>A5</b> (E) and <u>deep sand</u> - <b>H2</b> (M). The land is fully arable, although there is some potential for both wind and water erosion, due to the relatively light texture of the soils and the slope of the land. Productive potential is good, with only minor limitations due to water holding capacity, fertility, boron toxicity and alkalinity.
UIf UIm	9.3 1.1	Undulating dunefields with 30-60% coverage of low dunes (to 5m) <b>UIf</b> Dunes superimposed on rises with slopes of 3-4%. <b>UIm</b> Dunes superimposed on rises with slopes of 4-10%. Main soils: <u>rubbly calcareous sandy loam</u> - <b>A4</b> (E) with <u>sandy loam over red sandy clay</u> - <b>C1</b> (L) in swales, and <u>deep sand</u> - <b>H2</b> (E) on dunes. Soil conditions change rapidly across the dune-swale landscape. All the land is arable, but the dunes have moderate limitations due to low fertility, restricted water holding capacity, and wind erosion potential. The heavier textured swales are more fertile with minor limitations due to boron toxicity, wind and water erosion potential and moderate fertility.

# 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)



**Detailed soil profile descriptions:**

- A4** Rubbly calcareous sandy loam (Regolithic, Supracalcic / Lithocalcic Calcarosol)  
Calcareous sandy loam to sandy clay loam, more clayey and calcareous in the subsurface, overlying Class III B or III C carbonate rubble at moderately shallow depth, over highly calcareous loamy to clay loamy Woorinen Formation.
- A2/B2** Shallow rubbly calcareous sandy loam (Paralithic, Lithic, Lithocalcic Calcarosol)  
Thin to medium thickness calcareous sandy loam grading to highly calcareous sandy clay loam with more than 50% carbonate rubble or occasionally sheet calcrete, over quartzite at between 50 and 100 cm.
- A5** Calcareous loam (Regolithic, Hypercalcic / Supracalcic Calcarosol)  
Calcareous sandy loam to clay loam, more clayey and calcareous in the subsurface overlying a very highly calcareous clay (Class I or III A carbonate) or rubbly Class III B carbonate at moderately shallow depth. The soil is underlain by highly calcareous loamy to clayey Woorinen Formation over Blanchetown Clay equivalent.
- A6/A5** Calcareous loam (Regolithic, Hypercalcic Calcarosol)  
Calcareous loam to clay loam becoming more calcareous and more clayey with depth, grading to fine textured alluvium.
- B2** Shallow calcareous sandy loam on calcrete (Petrocalcic Calcarosol)  
15 - 25 cm calcareous sandy loam grading to a highly calcareous sandy clay loam with variable rubble over sheet calcrete at about 35 cm.
- C1** Sandy loam over red sandy clay (Calcic, Red Chromosol)  
Sandy loam over a red brown massive sandy clay with soft Class I / IIIA carbonate at moderate depth.
- C3** Loam over red clay (Supracalcic / Lithocalcic, Red Chromosol / Dermosol)  
Sandy loam to clay loam overlying a red sandy clay to clay grading to Class III B or III C carbonate rubble at moderately shallow depth. The soil is underlain by fine Woorinen Formation carbonate.
- H2** Deep sand (Regolithic, Calcic Calcarosol)  
Thick to very thick calcareous loamy sand, grading to a calcareous clayey sand with Class IV carbonate at moderate depth.

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

