YEE Yeelanna Land System

Area: 330.9 km^2

Landscape: Gently undulating to undulating rises and low hills formed over deeply weathered basement rocks and associated localized alluvial outwash sediments, flanked by fans and flats on deep alluvial (Pooraka) and Tertiary deposits. The ratio of rises to flats is slightly less than 50:50.

Annual rainfall: 375 - 425 mm average

Main soils:

Red brown earth (ironstone) - **D6** (Ferric, Hypercalcic, Red Chromosol)
Thin ironstone gravelly sandy loam to clay loam over a well structured red clay with variable ironstone gravel, grading to Class I carbonate within 30 cm over alluvial or Tertiary sediments.

Red brown earth (deep) - **D2** (Hypercalcic, Red Chromosol / Dermosol)
Medium thickness friable loam with a paler coloured A2 layer, over a well structured red clay, highly calcareous from about 30 cm grading to clayey alluvium or Tertiary material.

Red brown earth (clayey) - **C4** (Hypercalcic, Red Dermosol)
Medium thickness friable clay loam with a paler coloured A2 layer, over a coarsely structured red clay, highly calcareous from about 30 cm grading to clayey alluvium or Tertiary material.

Butler - **F2** (sodic) **/ F1** (non sodic) (Hypercalcic, Brown Sodosol / Sodic, Brown Chromosol)
Thin to medium thickness hard loamy sand to sandy loam over a brown mottled clay with strong columnar structure, highly calcareous from about 20 cm, grading to alluvial or Tertiary clays.

Minor soils:

Wiabuna (rubbly) - **A5** (Regolithic, Lithocalcic / Supracalcic Calcarosol)
Calcareous sandy loam to clay loam grading to carbonate rubble with clayey Tertiary sediments within 120 cm.

Saline soil - **N2** (Salic / Hypersalic Hydrosol)
Miscellaneous wet saline soil influenced by rising saline groundwater tables.

Skeletal soil - **L1** (Lithic / Petroferric, Leptic Tenosol / Rudosol)
Variable gravelly loamy sand to sandy clay loam over basement rock or massive ironstone at depths usually less than 50 cm.

Summary: The landscape comprises two distinctive features. Gently undulating to undulating rises are characterized by ironstone gravelly loam over red clay, and calcareous sandy loam soils. These soils are moderately deep and fertile, with slight to moderate limitations caused by water erosion potential, acidification (loam over clay soils only), poor structure and sporadic salinity. Flats and very gentle outwash fans have deep sandy loam to clay loam soils with either well structured red clay subsoils, or dispersive brown clay subsoils. These are deep and moderately fertile, but the dispersive soils in particular are prone to waterlogging and restricted root growth. All are susceptible to surface structure problems and there is sporadic saline seepage, with some broader saline flats.

Soil Landscape Unit summary: 8 Soil Landscape Units (SLUs) mapped in the Yeelanna Land System

SLU	% of area	Component	Main soils	Prop#	Notes
DJB	29.2	Gently undulating rises	RBE (ironstone)	V	Rises formed on deeply weathered rock with mainly ironstone gravelly sandy loams with red clayey subsoils. These are moderately deep and fertile, but prone to slight waterlogging, poor structure and acidification. Associated calcareous sandy loams are moderately fertile, with reduced water holding capacity, but not prone to waterlogging or acidification. Butler soils are infertile and prone to waterlogging and poor root growth. Potential for water erosion is slight to moderate. Up to 2% of the land is affected by salinity.
			Wiabuna	L	
			Butler	L	
DJC	15.5	Undulating rises	RBE (ironstone)	V	
			Wiabuna	L	
			Butler	L	
DJZ	1.5	Flat topped crests	RBE (ironstone)	V	
			Wiabuna	L	
			Butler	L	
ETD	0.5	Rocky moderate slopes	RBE (ironstone) / skeletal	D	Semi arable slopes with shallow stony soils associated with deeper loam over clay soils as above. Potential for water erosion is moderately high.
JbA	36.3	Flats	RBE (deep / clayey)	E	Flats and very gentle slopes with deep texture contrast soils. Main limitations are poor surface structure (subsurface as well in Butler soils), and waterlogging, with sporadic salinity. RBE (deep): Loam over clay - fertile, moderately well drained, poor surface structure – high productive potential. RBE (clayey): Fertile, deep and potentially productive. Butler: Sandy loam over poorly structured clay - moderately fertile but subject to waterlogging and poor root growth (dispersive subsoil).
			Butler	L	
JbB	15.8	Very gentle slopes	RBE (deep / clayey)	V	
			Butler	L	
ZA-	1.1	Variable salinity flats	Saline soil	D	Non arable, but mostly suitable for establishment of salt tolerant pasture and forage plants.
ZD-	0.1	Salt lakes	-	D	-

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)

Further information: DEWNR Soil and Land Program