## **DUR** Dusthole Range Land System

**Area:** 92.6 km<sup>2</sup>

Landscape: Range of rocky steep low hills north-west of Oodlawirra

**Annual rainfall:** 255 – 330 mm average

Geology: Neoproterozoic Ulupa Siltstone Formation consisting of grey-green and purple

siltstones and shales. Holocene alluvium/colluvium flanks the ranges and is more

common on the northern edge.

Main soils: L1 (27%) Shallow soil on rock (Rocky Rudosol-Tenosol)

A2 (22%) Calcareous loam on rock (Paralithic Calcarosol)

**RR** (21%) Bare rock

Minor soils: D4 (8%) Loam over pedaric red clay (Pedaric Red Sodosol-Dermosol)

C1 (5%) Gradational sandy loam (Calcic-Hypercalcic Kandosol-Calcarosol)

A3 (4%) Deep moderately calcareous loam (Calcic Calcarosol)

A5 (4%) Rubbly calcareous loam on clay (Supracalcic-Lithocalcic Calcarosol on

clay)

C2 (3%) Gradational loam on rock (Shallow Red Dermosol-Kandosol-Calcarosol)

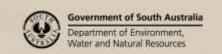
**Summary:** The Dusthole Range Land System consists of steep rocky hills formed on siltstones and

shales with shallow soils and rolling rises with calcareous soils and red texture-contrast

soils on associated pediments.

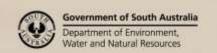
Soil Lanscape Unit summary: Dusthole Range Land System (DUR)

| SLU | %of<br>area | Component         | Main<br>soils | Prop# | Notes   |
|-----|-------------|-------------------|---------------|-------|---|
| AAA | 1.4         | Undulating rises  | L1RRA2        | D     | Rises and hills with shallow rocky calcareous soils formed  |
| AAB | 3.5         | Rolling rises     | L1RRA2        | D     | on fine-grained rocks. Rock outcrops are common.  |
| AAC | 10.6        | Rolling low hills | L1RRA2        | D     |   |
| AAD | 34.1        | Steep low hills   | L1RRA2        | D     | AAA Undulating rises with shallow rocky soils or bare rock outcrop. Relief is less than 30m, slopes are 3-10%.  AAB Rolling rises as above. Relief is 9-30m, slopes are 10-30%.  AAC Rolling low hills as above. Relief is less than 30m slopes are 10-30%.  AAD Steep low hills as above. Relief is 30-90m, slopes are 30-50%. |
|     |             |                   |               |       | Main soils: <u>Shallow stony soils on rock</u> - <b>L1</b> , <u>Rock outcrop</u> - <b>RR</b> and <u>Calcareous loam on rock</u> - <b>A2</b> .   |
| ABC | 0.8         | Rolling low hills | L1RR          | D     | Rolling low hills with shallow, often calcareous, soils on quartzite, or bare rock. Relief: 30-90m, slopes are 3-10%.  Main soils: Shallow stony soils on rock - L1. Rock outcrop - RR is common.   |
| AYB | 13.9        | Rolling rises     | A2L1RR        | D     | Rolling rises with shallow calcareous loam on calcareous siltstone (Tapley Hill Formation) or other finegrained rocks or bare rock. Relief is less than 30m, slopes are 10-30%.  Main soils: Calcareous loam on rock – A2 and Shallow   |



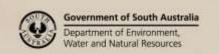


| <del></del> |     |                     | I          |          | International In |
|-------------|-----|---------------------|------------|----------|--|
| DCI         | 0.5 | Challand            | D100       | 1        | stony soils on rock - L1 and Bare rock - RR.   |
| DSI         | 2.5 | Shallow<br>pediment | D1C2<br>D7 | ٧        | Pediments and rises complexes with shallow, clay-<br>loamy surfaced, duplex soils over rock with more than   |
|             |     | Rock outcrop        | L1RR       | С        | 20% outcropping rock.  |
| DSn         | 1.5 | Shallow<br>pediment | D1C2<br>D7 | ٧        | <b>DSI</b> Gently undulating pediment. 20-30% bare rock.   |
|             |     | Rock outcrop        | L1RR       | С        | Moderately gullied (10-20%) and scalded (10-50%).  |
|             |     |                     |            |          | Slopes are 1-3%, relief is less than 9m.   |
|             |     |                     |            |          | <b>Dsn</b> Rolling pediment plain. Moderately gullied and scalded. Slopes are 10-30%, relief is up to 30m.   |
|             |     |                     |            |          | Main soils: Clay loam over pedaric red clay on rock -  |
|             |     |                     |            |          | D1, Gradational red-brown clay loam over rock-C2,  |
|             |     |                     |            |          | Loam over poorly structured clay on rock -D7 and   |
| DaKz        | 1.0 | Plains              | D1D4       | D        | Shallow stony soils on rock - L1.  Plains and pediments with pedaric (crumbly), texture-   |
| Duite       | 1.0 |                     | C2         |          | contrast soils with calcareous subsoils over basement  |
|             |     |                     |            |          | rock within 1 metre of the surface. Soils have clay-loamy  |
|             |     |                     |            |          | surfaces.  |
|             |     |                     |            |          | Moderately gullied, saline and scalded.  |
|             |     |                     |            |          | Main soils: <u>Loam over clay on rock</u> - <b>D1</b> , <u>Loam over</u>   |
|             |     |                     |            |          | pedaric red clay - <b>D4</b> and <u>Gradational loam on rock</u> - <b>C2</b> .   |
| EDC         | 4.1 | Undulating rises    | C2L1       | D        | Undulating rises with gradational red loamy sand on  |
|             | ••• |                     |            |          | rock or very shallow loamy sand on rock. 10-30% rock   |
|             |     |                     |            |          | outcrop. Relief is less than 30m, slopes are 3-10%.  |
|             |     |                     |            |          | Main soils: Gradational loam on rock -C2 and Shallow   |
| EOK         | 2.6 | Plains              | A2A6       | D        | stony soils on rock - L1.  Plains with pulverulent gradational calcareous sandy  |
| z           | 2.0 | i idii is           | /\∠/\\     |          | loam over clay loam on weathered rock; or deep   |
|             |     |                     |            |          | gradational calcareous loam over rubbly clay loam.   |
|             |     |                     |            |          | Moderately gullied, saline and scalded.  |
|             |     |                     |            |          | Main soils: <u>Calcareous loam on rock</u> – <b>A2</b> and   |
|             |     |                     |            |          | Gradational calcareous clay loam - A6.   |
| EVC         | 0.5 | Undulating rises    | A2         | ٧        | Undulating rises with gradational calcareous sandy   |
|             |     | Rocky outcrops      | RR         | С        | loam over clay loam on weathered rock; 10-30%  |
|             |     |                     |            |          | shallow calcareous sandy loam on rock, or bare rock. 20-30% bare rock. Slopes: 3-10%, relief is less than 9-30m.   |
|             |     |                     |            |          | Main soils: <u>Calcareous loam on rock</u> – <b>A2</b> and <u>Bare rock</u>  |
|             |     |                     |            |          | – RR.  |
| JKYz        | 8.6 | Flood plains        | D4A3       | D        | Flood plains with texture contrast sandy loam over   |
|             |     |                     | C1         |          | crumbly red clay, or gradational moderately calcareous sandy loam over clay, or gradational loam   |
|             |     |                     |            |          | over red clay. Severely gullied (over 20% affected),   |
|             |     |                     |            |          | moderately saline throughout profiles and 10-50%   |
|             |     |                     |            |          | scalded.   |
|             |     |                     |            |          | Main soils: <u>Loam over pedaric red clay on rock</u> - <b>D1</b> ,  |
|             |     |                     |            |          | Deep moderately calcareous loam - A3 and Rubbly  |
|             | _   |                     |            | <u> </u> | <u>calcareous loam on clay</u> - <b>A5</b> .   |
| JLLz        | 1.9 | Pediments           | D4         | D        | Pediments with more than 20% pedaric, texture contrast   |
|             |     |                     |            |          | (loam over crumbly red clay) soils, but less than 20% calcareous gradational soils.  |
|             |     |                     |            |          | Highly saline throughout soils, 10-20% gullied and 10-50%  |
|             |     |                     |            |          | scalded.   |
|             |     |                     |            |          | Slopes are 1-3%, relief is less than 9m  |
|             |     |                     |            |          | Main soils: <u>Clay loam over pedaric red clay</u> - <b>D4</b> and   |





| h     |     |                | ı    |          |  |
|-------|-----|----------------|------|----------|--|
|       |     |                |      |          | Loam over pedaric red clay on rock - D1, with minor                    |
|       |     |                |      |          | occurrences of <u>Deep moderately calcareous loam</u> -                |
|       |     |                |      |          | A3.  |
|       |     |                |      |          |  |
|       |     |                |      |          |  |
| JMB   | 0.8 | Pediments      | D4   | D        | Moderately scalded pediments with stony, pedaric,                      |
| JMl   | 2.2 | Pediments      | D4   | D        | red, texture contrast soils with quartz gravel on the                  |
| 31711 | ۷.۷ | i comments     | D-7  |          | surface.   |
|       |     |                |      |          | JMB Gently sloping pediments with clay loam over                       |
|       |     |                |      |          | crumbly red clay. Slopes are 1-3%, relief is less than 9m              |
|       |     |                |      |          | JMI Gently sloping pediments as above. Moderately                      |
|       |     |                |      |          | gullied and scalded.   |
|       |     |                |      |          |  |
|       |     |                |      |          | Main soils: quartz gravelly variants of <u>Clay loam over</u>          |
|       |     |                |      |          | pedaric red clay - <b>D4</b> .   |
| JZG   | 0.6 | Pediment       | D4A5 | V        | Pediment-basement rock complex with red texture                        |
| 125   | 0.0 | Rocky outcrops | RR   | C        | contrast soils on pediments and 20-30% rocky rises with                |
|       |     | NOCKY OUICIOPS | IXIX |          | shallow texture contrast soils.  |
|       |     |                |      |          | S. G. G. T. TOMOTO COTTINUOS SONO.                                     |
|       |     |                |      |          | JZG Gently sloping pediments with clay loam over                       |
|       |     |                |      |          | crumbly red clay, or rubbly calcareous loam on clay.                   |
|       |     |                |      |          | 20-30% rocky outcrops. Moderately gullied (10-20%).                    |
|       |     |                |      |          |  |
|       |     |                |      |          | Main soils: Loam over pedaric red clay - <b>D4</b> and <u>Rubbly</u>   |
|       |     |                |      |          | calcareous loam on clay - A5.  |
|       |     |                |      |          | Rocky rises: Main soils are: <u>Bare rock</u> – RR.                    |
| KcG   | 1.2 | Pediment       | A5A4 | D        | Pediments with mostly gradational calcareous soils, but                |
| KcH   | 1.7 | Pediment       | A5A4 | D        | with more than 20% <u>non</u> -calcareous gradational soils            |
|       |     |                |      |          | (Kandosols).   |
|       |     |                |      |          |  |
|       |     |                |      |          | <b>KcG</b> Gently sloping pediments with deep rubbly                   |
|       |     |                |      |          | calcareous clay loam on clay, or clay loam on crumbly                  |
|       |     |                |      |          | red-brown clay, or gradational sandy clay loam over                    |
|       |     |                |      |          | massive red clay. Moderately gullied.                                  |
|       |     |                |      |          | Slopes are 1-3%, relief is less than 9m.                               |
|       |     |                |      |          | KcH Undulating pediments as above. Moderately                          |
|       |     |                |      |          | gullied. Slopes are 3-10%, relief is less than 9m.                     |
|       |     |                |      |          |  |
|       |     |                |      |          | Main soils: Rubbly calcareous loam on clay - A5 and                    |
|       |     |                |      |          | <u>Friable gradational clay loam</u> - <b>C3</b> .                     |
| KLB   | 1.0 | Pediment       | A5   | D        | Gently sloping pediments with deep rubbly calcareous                   |
|       |     |                |      |          | loam over clay. 10-30% shallow calcareous loam over                    |
|       |     |                |      |          | rock or calcrete. Slopes are 1-3%, relief is less than 9m.             |
|       |     |                |      |          |  |
|       |     |                |      |          | Main soils: Rubbly calcareous clay loam on clay - A5.                  |
|       |     |                |      |          | Minor soils include: <u>Calcareous clay loam on rock</u> – <b>A2</b> , |
|       |     |                |      |          | Gradational red-brown clay loam over rock-C2 and                       |
| ***   |     |                | L    | 1        | Shallow calcareous loam on calcrete – <b>B2</b> .                      |
| KQB   | 1.2 | Pediment       | A5   | V        | Pediment and basement-rise complexes with mostly                       |
|       |     | Shallow rises  | A2   | С        | calcareous gradational soils. Here gently sloping                      |
|       |     |                |      |          | pediments occur with deep rubbly calcareous loam                       |
|       |     |                |      |          | over clay soils. 10-30% clay loam over crumbly red clay.               |
|       |     |                |      |          | 20-30% rises with shallow calcareous loam over rock or                 |
|       |     |                |      |          | bare rock. Slopes are 1-3%, relief is less than 9m.                    |
|       |     |                |      |          | Main soils: Pubbly adlagracus lagra an algue AF as                     |
|       |     |                |      |          | Main soils: Rubbly calcareous loam on clay - A5 on                     |
| VVD   | 4.0 | Doding a sat   | C1   | <u> </u> | pediments and <u>Calcareous loam on rock</u> – <b>A2</b> on rises.     |
| KXB   | 4.2 | Pediment       | C1   | D        | Gently sloping pediments with gradational sandy loam                   |
|       |     |                |      |          | over red clay on rock; 10-30% deep calcareous sandy                    |
|       |     |                |      |          | loam over, often rubbly, clay.   |
|       |     |                |      |          | Slopes are 1-3%, relief is less than 9m.                               |
| 11    |     |                | 1    | 1        | Main soils: <u>Gradational sandy loam</u> - <b>C1</b> .                |





# 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:

- A2/L1 <u>Shallow calcareous loam (Paralithic, Hypercalcic / Lithocalcic Calcarosol)</u> (A2) OR <u>Shallow stony loam (Calcareous, Paralithic, Leptic Tenosol)</u> (L1).
- A3 Deep moderately calcareous (sandy) loam (Calcic Calcarosol)
  Calcareous (sandy) loam topsoil grading into loamy-clay loamy subsoil without a significant CO<sub>3</sub> buildup in the subsoil (<20% CO<sub>3</sub> in subsoil). Pediment type Calcarosols.
- Deep (rubbly) calcareous loam (Hypercalcic-Lithocalcic Calcarosol)

  Calcareous sandy-clay loamy topsoil grading into loamy-clay loamy subsoil with a significant CO<sub>3</sub> buildup in the subsoil. Often rubbly. Soil usually >120 cm in depth.
- Rubbly calcareous loamy sand on clay (Supracalcic-Lithocalcic Calcarosol on clay)
  Calcareous loamy sand topsoil grading into loamy-clay loamy subsoil on a clayey substrate.
  Usually rubbly. Clayey substrate occurs at >60 cm and <120 cm.
- A6 <u>Gradational calcareous clay loam (Pedal Hypercalcic-Lithocalcic Calcarosol</u> on clayey subsoil) Calcareous loams to clay loams grading into brown-red clay. Often rubbly.
- C1 <u>Gradational sandy loam (Calcic-Hypercalcic Kandosol-Calcarosol)</u>
  Friable sandy to loamy topsoil grading into massive red-brown alkaline loamy to clay loamy subsoil.
- C2 <u>Gradational loam on rock (Calcic / Hypercalcic Red Dermosol)</u>
  Loam to clay loam grading to friable red clay with soft Class I carbonate within 50 cm, grading to weathering rock within 100 cm.
- Loam over red clay on rock (Hypercalcic / Calcic, Red Chromosol / Sodosol)

  Medium thickness hard gravelly loam over a red clay, friable and finely structured (D1), to hard, coarsely structured and dispersive (D7), calcareous with depth, grading to weathering basement rock within 100 cm.
- Loam over red friable clay (Calcic, Pedaric, Red Sodosol)
   Thin to medium thickness fine sandy loam to loam over finely structured friable red clay, calcareous from about 50 cm, grading to fine or medium grained alluvium.
- D7 Loam over dispersive red clay on rock (Calcic / Hypercalcic, Red Sodosol)

  Medium to thick hard sandy loam to clay loam sharply overlying a coarsely structured dispersive red clay, calcareous with depth, grading to highly weathered kaolinized siltstone.
- Shallow stony loam (Paralithic, Leptic Tenosol)
  Shallow stony loam, often calcareous throughout or with depth, overlying weathering rock shallower than 50 cm.
- **RR** Bare rock

Further information: DEWNR Soil and Land Program

