

# DUS Dutchmans Stern Land System

<b>Area:</b>	119.5 km <sup>2</sup>
<b>Landscape:</b>	Steep rocky ranges with scree slopes. Named after "The Dutchmans Stern", a curved steep mountain range at the northern end of the land system.
<b>Annual rainfall:</b>	325 – 545 mm average
<b>Geology:</b>	Pound Quartzite, ABC Range Quartzite, and Willochra Formation siltstones
<b>Topography:</b>	Very steep rocky mountain range with extensive quartzite ridges
<b>Elevation:</b>	Around 800 m asl, up to 820 m at the Dutchmans Stern
<b>Relief:</b>	Approximately 250 m, but as much as 360m near Dutchmans Stern
<b>Soils:</b>	Very shallow stony soils over quartzite and other hard rock types are most common, with lesser areas of shallow calcareous loams and outcropping rock.

#### Main soils:

**L1a** Shallow stony loamy sand to sandy loam (on quartzite)

**RR** Rock outcrop

**A2** Shallow calcareous loam (on fine grained rock)

#### Minor soils:

##### On rock

**B2** Shallow calcareous loam on calcrete

**C2** Gradational loam on rock

**D7** Loam over poorly structured clay on rock

**L1b** Shallow stony loam (on fine grained rock)

##### On outwash sediments

**A5** Rubbly calcareous clay loam on clay

**C1** Gradational sandy loam

**C3** Gradational clay loam

**M1** Deep alluvial loam

<b>Summary:</b>	The Dutchmans Stern Land System is mostly non arable steep rocky hill country with shallow stony, and low moisture retention soils. Slopes are often unstable, with some areas of active scree movement, which make the land virtually impossible to traverse with vehicles.
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**Soil Landscape Unit summary:** 24 Soil Landscape Units (SLUs) mapped in Dutchmans Stern Land System:

SLU	% of area	Component	Main soils	Prop#	Notes
AAC	2.0	Rolling low hills	L1C2	D	Hills and rises with very shallow loamy soils on rocky slopes. <b>AAC</b> Bare rolling low hills. Willochra Formation siltstone and sandstone are exposed as rocky outcrops on ridges. Relief is



AAH	4.3	Rolling rises	L1	D	less than 30m slopes are 10-30%. Main soil: <u>shallow stony loam - L1b</u> and <u>gradational loam on rock - C2</u> . Non-arable. <b>AAH</b> Rolling rises with much rock outcrop. Relief is less than 30m, slopes are 10 - 30%. Watercourses are eroded and incised. Main soils: <u>shallow stony loam - L1b</u> , with <u>shallow calcareous loam - A2</u> and <u>gradational loam on rock - C2</u> . Non-arable.
ABB	3.9	Rolling rises	L1RR	D	Rises and hills with linear rocky quartzite outcrops and shallow stony soils on interbedded fine grained rocks. <b>ABB</b> Rolling rises. Relief is less than 30m, slopes are 10-30%. <b>ABC</b> Rolling low hills. Relief is 30-90m, slopes are 3-10%. <b>ABD</b> Steep low hills. Relief is 30-90m, slopes are 30-60%. <b>ABE</b> Steep hills. Relief is 90-300m, slopes are 30-60%. Main soils: <u>shallow stony loamy sand - L1a</u> with <u>rock outcrop - RR</u> (quartzite ridges), and <u>shallow stony loam - L1b</u> and <u>shallow calcareous loam - A2</u> (on fine grained rocks).
ABC	2.9	Rolling low hills	L1RR	D	
ABD	1.9	Steep low hills	L1RR	D	
ABE	3.1	Steep hills	L1RR	D	
ADJ	1.3	Steep low hills	L1RR	D	Hills with very shallow stony calcareous soils formed on Skillogalee Dolomite and calcareous fine grained rock. <b>ADJ</b> Steep low hills with gullying affecting 10-20% of land. Slopes are 30-60%, relief is less than 90m. Watercourses are eroded. <b>ADj</b> Steep low hills with eroded watercourses and sheet erosion. Relief is 30-90m, slopes are 30-60%. <b>ADI</b> Very steep hills with eroded watercourses and sheet erosion. Relief is 90-300m, slopes are 60-100%. Main soils: <u>shallow stony loam - L1b</u> , with <u>shallow calcareous loam - A2</u> , <u>rock outcrop - RR</u> and <u>gradational loam on rock - C2</u> . Non arable.
ADj	3.6	Steep low hills	L1RR	D	
ADI	9.1	Very steep hills	L1RR	D	
AME	1.2	Steep hills	L1C2	D	Hills formed on ABC Range Quartzite with very shallow rocky soils. <b>AME</b> Steep hills. Relief is 90-300m, slopes are 30-60%. <b>AMF</b> Very steep hills. Relief is 90-300m, slopes are 60-100%. Main soils: <u>shallow stony loam - L1b</u> , <u>gradational loam on rock - C2</u> and <u>rock outcrop - RR</u> , with <u>loam over poorly structured clay on rock - D7</u> .
AMF	3.5	Very steep hills	RRL1	D	
AQC	3.2	Rolling low hills	L1	D	Non-arable low hills formed on quartzite (Pound Quartzite Formation) with very shallow rocky soils and bare rocky outcrops. <b>AQC</b> Rolling low hills. Relief is 30-90m, slopes are 3-10%. <b>AQD</b> Steep low hills. Relief is 30-90m, slopes are 30-60%. <b>AQE</b> Steep hills. Relief is 90-300m, slopes are 30-60%. <b>AQF</b> Very steep hills. Relief is 90-300m, slopes are 60-100%. <b>AQW</b> Steep hills with scree slopes. Relief is 90-300m, slopes are 30-60%. <b>AQX</b> Very steep hills with scree slopes. Relief is 90-300m, slopes are 60-100%. Main soils: <u>shallow stony loamy sand to sandy loam - L1a</u> and <u>rock outcrop - RR</u> with <u>gradational loam on rock - C2</u> .
AQD	5.3	Steep low hills	L1	D	
AQE	13.2	Steep hills	L1	D	
AQF	22.2	Very steep hills	L1RR	D	
AQW	3.8	Steep hills	L1RR	D	
AQX	4.1	Very steep hills	L1RR	D	
ERB	0.4	Gently undulating rises	A2L1 RR	D	
ERC	2.4	Undulating rises	A2L1 RR	D	
ERG	0.3	Gently undulating rises	A2L1 RR	D	
ERH	0.5	Undulating rises	A2L1 RR	D	
ERJ	6.7	Drainage line	A2L1 RR	D	
ERK	0.4	Gently	A5	D	
KLB	0.4	Gently	A5	D	Gently undulating pediments formed on mixed fine grained



		undulating pediments			outwash and weathering rock. Slopes are 1-3%, relief is less than 9m. Main soils: <u>rubbly calcareous clay loam on clay - A5</u> , with <u>shallow calcareous loam - A2</u> , <u>gradational loam on rock - C2</u> and <u>shallow calcareous loam on calcrete - B2</u> .
XHT	0.7	Drainage lines	M1C1 C3	D	Drainage line with mostly coarse textured soils. More than 20% of banks are eroded. Main soils: <u>deep alluvial loam - M1</u> , <u>gradational sandy loam - C1</u> and <u>gradational clay loam - C3</u> .

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

D	Dominant in extent (>90% of SLU)	C	Common in extent (20–30% of SLU)
V	Very extensive in extent (60–90% of SLU)	L	Limited in extent (10–20% of SLU)
E	Extensive in extent (30–60% of SLU)	M	Minor in extent (<10% of SLU)

### Detailed soil profile descriptions:

- A2** Shallow calcareous loam (Paralithic, Hypercalcic / Lithocalcic Calcarosol)  
Calcareous stony loam grading to soft or rubbly carbonate over weathering dolomite or calc-siltstone.
- A5** Rubbly calcareous clay loam on clay (Regolithic, Supracalcic / Hypercalcic Calcarosol)  
Calcareous clay loam grading to a very highly calcareous rubbly sandy clay loam to light clay, over a clayey substrate deeper than 60 cm, but within 120 cm.
- B2** Shallow calcareous loam on calcrete (Petrocalcic, Calcic / Lithocalcic Calcarosol)  
Stony calcareous sandy loam to loam, often with a very highly calcareous more clayey subsoil, over sheet calcrete within 50 cm. This grades to rubbly carbonate over weathering basement rock within 150 cm.
- C1** Gradational sandy loam (Hypercalcic, Red Kandosol)  
Friable sandy to loamy topsoil grading to massive red-brown alkaline loamy to clay loamy subsoil, highly calcareous with depth, over alluvium.
- C2** Gradational loam on rock (Calcic / Hypercalcic Red Dermosol)  
Loam grading to a friable red clay with soft Class I carbonate within 50 cm, grading to weathering rock within 100 cm.
- C3** Gradational clay loam (Calcic / Hypercalcic Red Dermosol)  
Friable clay loam grading to a friable red clay with abundant soft Class I carbonate within 50 cm, overlying alluvium within 100 cm.
- D7** Loam over poorly structured red clay on rock (Calcic / Hypercalcic, Red Sodosol)  
Medium to thick hard loam sharply overlying a coarsely structured dispersive red clay, calcareous with depth, grading to highly weathered kaolinized siltstone or quartzite.
- L1a** Shallow stony loamy sand to sandy loam on quartzite (Paralithic, Leptic Tenosol)  
Shallow stony loamy sand to sandy loam, often calcareous with depth, overlying quartzite shallower than 50 cm.
- L1b** Shallow stony loam on fine grained rock (Paralithic, Leptic Tenosol)  
Shallow stony loam, often calcareous with depth, overlying weathering fine grained rock shallower than 50 cm.
- M1** Deep alluvial loam (Calcareous, Regolithic, Brown-Orthic Tenosol)  
Very thick brown loam to sandy loam, usually calcareous with depth, continuing below 100 cm.
- RR** Rock outcrop

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

