ULE Uley Land System

Area: 1,349.0 km²

Landscape: Gently undulating to undulating stony rises formed on Bridgewater Calcarenites. Abundant

surface stone and extensive sheet calcrete are characteristic of the landscape. In places, calcareous Woorinen Formation silty sands and Lowan Sands blanket the surface giving rise to deeper sandy loam and sandy soils. Basement granites, gneisses, schists and quartzites protrude through the Bridgewater in the south east and along the west coast. These are abrupt rises and low hills with shallow stony soils. Tertiary sediments also protrude through the Bridgewater Formation in places. These are marked by ironstone soils. Along the coastal

strip are modern dunes and saline back swamps.

Annual rainfall: 375 - 525 mm average

Main soils: Terre - B3 (Petrocalcic, Leptic Tenosol)

Thin to medium thickness red sandy loam to clay loam over sheet calcrete.

<u>Calcrete</u> - **B2** (Petrocalcic, Lithocalcic Calcarosol)

Thin calcareous sandy loam to clay loam over hard calcrete, associated with abundant surface

calcrete and sheet rock.

Minor soils: Wookata - A1 (Supravescent, Hypercalcic / Lithocalcic Calcarosol)

Very highly calcareous (more than 40% CaCO₃) soft loamy sand to sandy loam grading to

very highly calcareous sandy loam with variable rubble content.

Wanilla (sodic) - J1 (Ferric, Brown Sodosol)

30 cm sandy loam with a bleached A2 layer containing abundant ironstone gravel, overlying a

yellowish brown poorly structured mottled sodic clay, often calcareous with depth.

<u>Semaphore</u> - **H1a/H3** (Shelly Rudosol)

Very thick sand comprising mixed shell and quartz grains.

Shallow Semaphore - **H1b** (Petrocalcic, Shelly Rudosol)

Thick shell sand over calcrete between 50 and 100 cm.

<u>Shallow Haslam</u> - **H1c** (Supravescent, Regolithic, Hypercalcic Calcarosol)

Highly calcareous loamy sand over calcrete at moderate depth (50-100 cm).

<u>Haslam</u> - **H1d** <u>(Supravescent, Hypercalcic Calcarosol / Shelly Calcarosol)</u>

Thick highly calcareous sand, becoming more calcareous with depth and continuing below

100 cm. These soils may consist of up to 90% fine shell fragments.

Skeletal soil - **L1** (Lithic / Petroferric, Leptic Tenosol / Rudosol)

Variable gravelly loamy sand to sandy clay loam over granite (L1a) or schist (L1b), and

sometimes massive ironstone, at depths usually less than 50 cm.

<u>Russell</u> - **B1** (Supravescent, Petrocalcic, Lithocalcic Calcarosol)

Medium thickness highly calcareous loamy sand to sandy loam containing increasing

amounts of rubble with depth, over sheet calcrete at less than 50 cm.

Ness - **D6** (Ferric, Calcic, Brown Chromosol)

Thin loamy sand to sandy loam over a brown to orange weakly structured clay with abundant ironstone gravel, calcareous with depth, grading to Tertiary clay or deeply weathered rock.

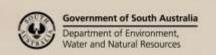
Yamba - **N2a** (Hypersalic Hydrosol)

Variable highly saline sand and clay of coastal flats and swamps. Saline soil - **N2b** (Salic / Hypersalic Hydrosol)

Miscellaneous wet saline soil influenced by rising saline groundwater tables.

<u>Deep calcareous sandy loam</u> - **A3** (Regolithic, Calcic Calcarosol)

Calcareous sandy loam grading to a highly calcareous sandy clay loam over alluvium.



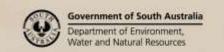


Summary:

The bulk of the landscape comprises gently undulating to undulating calcrete with shallow stony calcareous and non calcareous sandy loams. These are semi to non arable due to low waterholding capacity and machinery operation problems, although they are commonly fertile. Minor ironstone rich sandy loams and highly calcareous sandy loams to sands are deeper and potentially arable soils, but commonly occur as relatively small patches within larger non arable tracts. Shallow stony soils on basement rock outcrops, coastal sandhills and saline flats all have little if any agricultural value, and most are contained within conservation areas.

Soil Landscape Unit summary: 46 Soil Landscape Units (SLUs) mapped in the Uley Land System

SLU	% of area	Component	Main soils	Prop#	Notes
A-kg	2.2	Calcreted granite outcrops	Calcrete / skeletal	D	Shallow stony soils covered by scrub.
AKC	0.02	Mod. steep rocky slopes	Skeletal / Ness	D	Shallow stony soils over granite, with deeper ironstone rich soils - marginal for cultivation.
AMB	0.1	Gentle to moderate rocky slopes	Skeletal	D	Rocky slopes on gneisses, schists & quartzites. Land is too rocky &/or steep for cultivation.
AMC	0.2	Moderate rocky slopes	Skeletal	D	Used for grazing or conservation.
AMD	0.2	Steep rocky slopes	Skeletal	D	
FEB	0.5	Low rises	Wanilla (sodic)	D	Rises on lateritized Tertiary sediments. Wanilla
FJC	0.1	Gentle slopes	Ness	D	/ Ness soils are deep, marginally to moderately
FOB	0.3	Very gentle slopes Rocky slopes	Wanilla (sodic) / Ness Calcrete	E E	fertile but prone to acidification. Minor to moderate susceptibility to waterlogging. Slight to moderate water erosion potential, minor
		rocky slopes	Calcrete	E	saline seepage. Calcrete soils are shallow, stony and non arable.
KBC	0.1	Gentle slopes	Calcareous loam	D	Deep calcareous sandy loam on gentle slopes. Potentially productive.
MAA	0.2	Stony flats	Terre / Calcrete	D	Gently undulating to undulating rises on
MAB	4.3	Very stony rises	Terre / Calcrete	D	Bridgewater Calcarenites, partly overlain by
MABs	0.5	Very stony rises with sinkholes	Calcrete / Terre	D	highly calcareous Woorinen and Lowan deposits. Remnant ironstone capped Tertiary
MAC	0.2	Very stony slopes	Calcrete / Terre	D	sediments protrude through in places. Shallow
MAm	2.0	Very stony flats	Calcrete / Terre	E	stony soils with extensive sheet calcrete are
		Saline depressions	Saline soil	E	characteristic of these landscapes. Most land
MAn	4.8	Very stony rises	Calcrete / Terre	D	(Calcrete and Terre soils) is stony and non to
		Saline depressions	Saline soil	М	semi arable, but some soils are deeper:
MaB	1.6	Rises	Wookata / Haslam / Terre	D	Calcrete: Very shallow stony sandy loam associated with more than 50% sheet
MaBr	0.1	Stony slopes and ridges	Terre / Wookata / Russell	D	calcrete. <u>Terre</u> : Shallow stony sandy loam to sandy clay
MaC	3.5	Slopes	Wookata / Haslam / Terre	D	loam - marginally arable due to low waterholding capacity and surface
Mdh	2.2	Very stony rises	Calcrete / Terre	E	stone / sheet rock.
		Saline depressions	Saline soil	E	Wookata: Highly calcareous sandy loam with
Mdn	2.8	Very stony rises	Calcrete / Terre	V	slightly limited waterholding capacity,
		Sand spreads	Haslam	С	low fertility and slight to moderate wind erosion potential.
MeD	0.6	Moderate sandy / stony slopes	Haslam / Terre	D	Haslam: Deep calcareous (shell) sand with very low fertility and high wind erosion
MgB	8.2	Stony rises	Terre / Calcrete	V	potential. Haslam sand spreads have
-		Sandy loam rises	Wookata	E	potentiai. Hasiam sana spreads nave





MhB	40.2	Van aanthuun dulatina	Torro / Calarata	Ь	moderate execien netential mederate
MIIIB	48.3	Very gently undulating stony rises	Terre / Calcrete	D	moderate erosion potential; moderate to high sandhills have high to extreme
MhC	3.8	Gently undulating	Terre / Calcrete	D	potential.
WIIC	3.6	stony rises	Terre / Carcrete		Wanilla (sodic): Ironstone gravelly sandy loams
MhD	1.0	Moderate stony slopes	Terre / Calcrete	D	on Tertiary sediments. Marginal
MhE	1.3	Stony depressions	Terre / Calcrete	D	fertility and prone to waterlogging
MjB	0.6	Stony/sandy rises	Terre / Haslam	D	and water erosion.
MkA	1.2	Ironstone flats	Wanilla (sodic)	V	Saline soil: Areas where saline water tables are
IVIKA	1.2	Stony flats	Terre / Calcrete	L	near the surface – non arable
MkC	2.6	,	Terre / Calcrete	V	-
IVIKC	2.0	Moderate, very stony	Terre / Calcrete	V	
		slopes Ironstone slopes	Manilla (codis)	С	-
MmB	0.3	·	Wanilla (sodic) Terre / Calcrete	V	-
MIIID	0.3	Stony rises		C	-
34.4	0.1	Ironstone rises	Wanilla (sodic)		-
MxA	0.1	Flats	Wookata / Calcrete	E	-
TUES	1.0	Ironstone flats	Wanilla (sodic)	E	
WFC	1.0	High coastal dunes	Semaphore	D	Coastal landscapes with moderate to high
WFE	0.2	Moderate coastal	Semaphore	D	dunes (Semaphore), stony slopes (Russell) and
	0.0	dunes			saline back swamps (Yamba). Most of this land
WFc	0.2	High bare coastal	Semaphore	D	is fragile, easily degraded and of no agricultural value. Protection of dunes and amelioration of
	0.4	dunes			
WHD	0.4	High older coastal	Semaphore	D	past erosion damage are main management issues.
****	0.0	dunes		.,	issues.
WJ-	0.2	Tidal flats	Yamba	V	_
	-	Very stony rises	Russell	E	4
WM-	0.1	Mangrove swamps	-	D	_
WO-	0.2	Salt flats	Yamba	D	_
WR-	0.2	Salt flats	Yamba	V	_
		Coastal dunes	Semaphore	L	_
WX-	1.2	Sandy frontal slopes	Semaphore	E	
			Russell	E	
WY-	8.0	Stony frontal slopes	Russell	D	
WYA	0.1	Eroded stony frontal	Russell	D	
		slopes			
YHK	0.1	Sandy loam rises	Wookata	D	Wookata: Highly calcareous sandy loam with slightly limited waterholding capacity, low fertility and slight to moderate wind erosion potential.
ZD-	0.7	Salt lakes	-	D	Saline flats with limited stony or sandy rises.
ZHJ	0.6	Salt flats	Saline soil	V	Little agricultural value.
		Stony / sandy rises	Calcrete / Haslam	С	
ZK-	0.2	Salt flats	Saline soil	E	1
	0.2	Stony rises	Calcrete	E	-
l	1	5.5.19 115.55	-	_	

PROPORTION codes assigned to soils within Soil Landscape Units (SLU):

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)

Extensive in extent (30–60% of SLU) M Minor in extent (<10% of SLU)

Further information: <u>DEWNR Soil and Land Program</u>

