



CURNAMONA PROVINCE REGOLITH LANDFORMS

TRANSPORTED REGOLITH

ALLUVIAL SEDIMENTS

Depositional landforms

- Aap1** Reddish-brown alluvial sand, silt, clay and gravel, calcareous in part, in broad floodplains and fans. Local aeolian sediment in longitudinal, transverse, and source bordering dunes. Thickness variable, locally up to 790 m adjacent to Mundt Mundi Fault. Widespread through Broken Hill and Curnamona map areas.
- Aa1** Reddish-brown alluvial sand, silt, clay and gravel, calcareous in part, in channels and valley floodplains of seasonally active watercourses. Thickness variable, but generally < 6 m. Widespread through Broken Hill and Curnamona map areas.
- Ats1** Reddish-brown calcareous alluvial sand, silt, clay and gravel in broad coalescing, relatively undisturbed alluvial slopes and fans sourced from adjacent hills and mountains. Curnamona map area.
- Ats2** Reddish-brown alluvial sand and gravel in strongly dissected alluvial slopes and fans along the eastern margin of the Flinders Ranges, locally calcareous. A gravelly lag is generally present. West Curnamona map area.
- ADa1** Reddish-brown fine sand, silt and clay in broad active distal floodplains of very low relief, characterised by lack of well-defined channels. Local areas of aeolian sediment in low, degraded longitudinal dunes. West Curnamona map area.

Erosional landforms

- Aep1** Reddish-brown alluvial sand, silt, clay and gravel, locally calcareous, in gently undulating treeless erosional plains with 'contour' gilgai, and widely spaced sediment-choked watercourses. A gravelly lag is generally present. Thickness up to 40 m, SE of Broken Hill. Broken Hill and Curnamona map areas.
- Aep2** Reddish-brown alluvial sandy clay interfingering with channel deposits of sandstone and conglomerate (generally cemented by calcite) in sinuous topographically inverted ridges. Deposits of the ancestral Besamee River system. Discontinuous veneer of aeolian sand. Southwest Curnamona map area.
- Aep3** Alluvial gravelly and clayey sand, carbonate-cemented in part, in erosional plains with low rounded relief. Clasts are mainly rock fragments, up to 60 cm. May be locally silcreted. Southwest Curnamona map area.
- Aer1** Cainozoic alluvial gravelly and clayey sand in dissected rises and low hills north of the Flinders Ranges. The sediments may be as old as Eocene, and have cemented silcrete and regolith carbonate horizons, which in places give rise to low tableland landforms. Northwest Curnamona map area.
- ACep1** Alluvial polymictic gravel and sand, partially cemented by regolith carbonate, in broad alluvial valley plains, now incised by up to 12 m or more. A gravel lag is generally present. Locally, moderately to completely weathered bedrock is exposed in gullies. West Curnamona map area.

AEOLIAN SEDIMENTS

Dunefields

- ISu1** Reddish-brown aeolian clayey sand in longitudinal dunes in varying stages of degradation, finer sediments in swales and small claypans between dunes. Broken Hill and Curnamona map area.
- ISu3** Red-brown aeolian sand in low degraded dunes, separated by swales with darker coloured calcareous alluvium with gravel lag and poorly developed 'contour' gilgai. Southeast Curnamona map area.
- ISu4** Red-brown aeolian sand in well-developed longitudinal dunes, and lacustrine silt and clay in numerous well-developed claypans between dunes. Central Curnamona map area.

Lunettes and source bordering dunes

- lu1** Reddish-brown to white aeolian sand, silt, clay, and locally gypsum in lunettes, source-bordering dunes, sand islands in large playas, and extensive transverse leucite mound systems downwind of claypans, playa lakes, and major old drainage lines in dunefields. Broken Hill and Curnamona map areas.

COLLUVIAL SEDIMENTS

Dissected colluvial mantles

- cer1** Thin colluvial gravel overlying highly weathered bedrock or mottled clay of unknown origin in steep-sided rises with inclined planar top surfaces; present in broad valleys of the Flinders Ranges. Erosional remnants of old mantled pediments. West Curnamona map area.

LACUSTRINE SEDIMENTS

Claypans, playas, and permanent lakes

- Lep1** Grey lacustrine clay, silt, fine sand, and locally gypsum, in claypans, playas, and semi-permanent lakes. Broken Hill and Curnamona map areas.

Old beach deposits

- Lc1** Calcareous gravel and sand in low ridges west of and parallel to the margin of Lake Frome. Possible old storm deposits marginal to a former edge of the lake. Northwest Curnamona map area.

IN SITU REGOLITH

LAG

Undifferentiated

- RLep1** Lag of silcreted and ferruginous fragments on an erosional plain which may be a slightly dissected depositional surface on old alluvial sediments. North Curnamona map area.
- RLer1** Gravelly lag over highly weathered saprolite, in rises with 'contour' gilgai. Local outcrops of slightly weathered or ferruginous saprolite. Lag clasts include resistant bedrock lithologies, silcreted sediments, and ferruginous materials. South Curnamona and southwest Broken Hill map areas.

Ferruginous Lag

- RLep2** Ferruginous regolith materials, including ferruginous lag, ferruginised bedrock and pisolitic ferricrete, formed in and overlying weathered basement rocks. Mostly form erosional plains. Curnamona map area.

WEATHERED ROCK

Mesozoic and younger rocks

Indurated rocks

- Ser1** Silcreted saprolite (mostly Mesozoic and younger) and sediments, typically forming a cap to mesas and plateaux, or large undulating surfaces. Also includes lag accumulations of silcrete clasts, especially where shown within unit RLer1. Broken Hill and Curnamona map areas.

Highly weathered saprolite

- SHer1** Mostly highly weathered Mesozoic mudstone and sandstone in erosional rises and plains, overlain by a variety of thin surficial materials, locally including silcreted saprolite, and ferruginous and/or silcrete lag. Mudstones are generally bleached, and sandstones are locally highly ferruginised. North Broken Hill and Curnamona map areas.

Palaeozoic and Precambrian rocks

Undifferentiated saprolite

- Ser4** Weathered early Palaeozoic metasediments in low relief, shelf-like surfaces cut on bedrock at the eastern margin of the Flinders Ranges. Central west Curnamona map area.
- Sr2** Weathered Neoproterozoic metasediments in plateaux in regions of high relief in the Flinders Ranges. May be remnants of old landscapes. Northwest Curnamona map area.

Highly weathered saprolite

- SHer5** Highly weathered Precambrian metamorphics and metasediments in rises. Structure shows on Landsat imagery and airphotos over much of the area. Southwest Broken Hill, south Curnamona map areas.
- SHer6** Highly weathered Neoproterozoic metasediments in valley floors in the Flinders Ranges, and exposed in windows through Cainozoic outwash sediment. West Curnamona map area.

Slightly weathered saprolite

- SSe3** Slightly to moderately weathered Neoproterozoic metasediments in low hills and rises low in the landscape of the Flinders Ranges, interpreted to have been recessed through stripping of a highly weathered rock mantle. Includes minor areas of stone-mantled mesa-like rises of weathered bedrock interpreted as remnants of the mostly stripped mantle. West Curnamona map area.
- SSe9** Mostly slightly weathered Precambrian metasediments, granites, and high grade metamorphics in hills and low hills. South Curnamona map area.
- SSe1** Mostly slightly weathered Neoproterozoic to Early Palaeozoic metasediments in mountains and hills of the Flinders Ranges. West Curnamona map area.

SCALE 1:500 000

UNIVERSAL TRANSVERSE MERCATOR PROJECTION

LATITUDE OF ORIGIN: 0° LONGITUDE OF ORIGIN: 141°

AMG grid ticks and values are shown in grey at 50 kilometre interval

Regolith-landform unit boundary	LANDFORMS	EROSIONAL LANDFORMS
Erosional scarp	ap alluvial plain	ep erosional plain (< 9 m relief)
Watercourse and Lake boundary	af flood plain	er erosional rise (9-30 m relief)
Highway	la alluvial fan	el low hill (30-90 m relief)
Major road	lu lunettes and source-bordering dunes	eh hill (90-300 m relief)
Secondary road	ul dunefields	pl plateau
Railway	pp playa plain	em mountain (> 300 m relief)
Abandoned railway	oc beach	
State border		

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1:500 000 special map shown in blue

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CURNAMONA PROVINCE		
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It is recommended that this map be referred to as:
D.L. Gibson, 1998 - Curnamona Province Regolith Landforms (1:500 000 scale map). CRC for Landscape Evolution and Mineral Exploration, Perth/Canberra
Regolith-landform polygons based mainly on interpretation of 1:50 000 panoramic airphotos and Landsat TM imagery, with limited field checking. This map provides a broad overview of regolith and landforms in the Curnamona Province. Boundaries and polygon descriptions are generalised to show the main regolith types and physical processes
Copies of this map may be obtained from:
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**CURNAMONA PROVINCE
REGOLITH LANDFORMS**
1:500 000 SPECIAL
REVISED MAP DECEMBER 1998
SUBJECT TO AMENDMENT

PRIMARY INDUSTRIES
AND RESOURCES SA