

Unassigned

CENOZOIC  
QUATERNARY

NEOGENE

PALEOGENE  
EOCENE

MESOZOIC  
CRETACEOUS

PERMIAN

PALEOZOIC

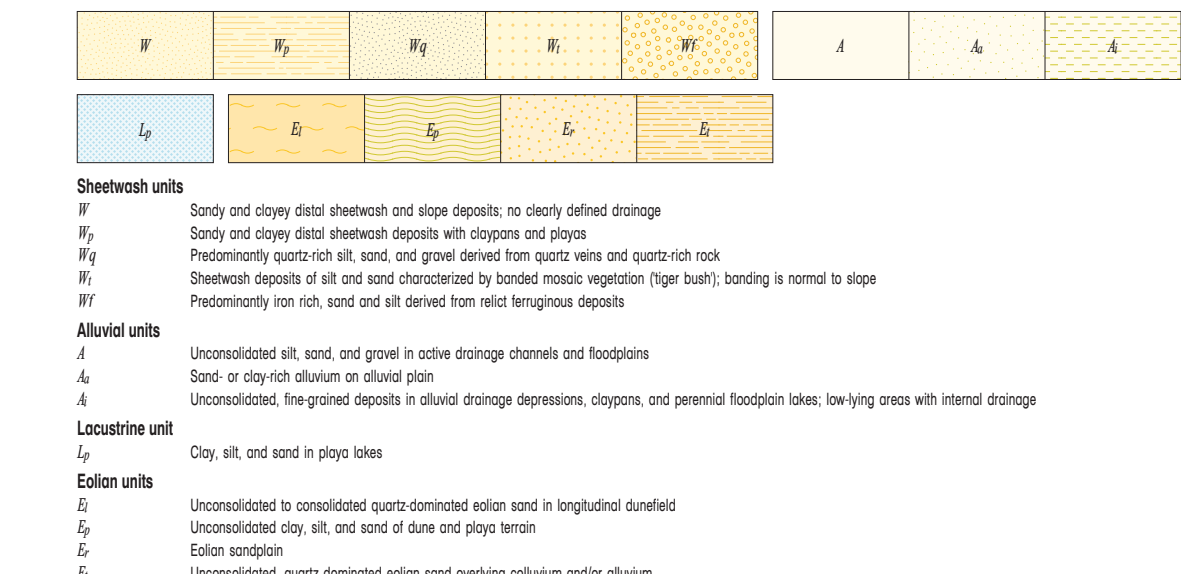
CARBONIFEROUS

DEVONIAN

NEOPROTEROZOIC

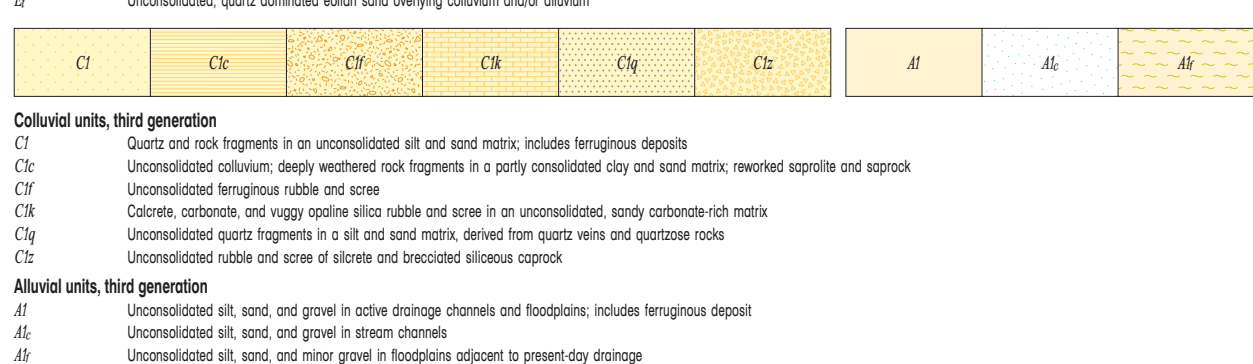
PALEOPROTEROZOIC

Moogooloo Metamorphics



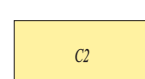
Sheetwash units

- W* Sandy and clayey distal sheetwash and slope deposits; no clearly defined drainage
  - W<sub>p</sub>* Sandy and clayey distal sheetwash deposits with claypans and playas
  - W<sub>q</sub>* Predominantly quartz-rich silt, sand, and gravel derived from quartz veins and quartz-rich rock
  - W<sub>i</sub>* Sheetwash deposits of silt and sand characterized by banded mosaic vegetation (tiger bush); banding is normal to slope
  - W<sub>f</sub>* Predominantly iron rich, sand and silt derived from relict ferruginous deposits
- Alluvial units**
- A* Unconsolidated silt, sand, and gravel in active drainage channels and floodplains
  - A<sub>s</sub>* Sand- or clay-rich alluvium on alluvial plain
  - A<sub>i</sub>* Unconsolidated, fine-grained deposits in alluvial drainage depressions, claypans, and perennial floodplain lakes; low-lying areas with internal drainage
- Lacustrine unit**
- L<sub>p</sub>* Clay, silt, and sand in playa lakes
- Eolian units**
- E<sub>i</sub>* Unconsolidated to consolidated quartz-dominated eolian sand in longitudinal dune/field
  - E<sub>p</sub>* Unconsolidated clay, silt, and sand of dune and playa terrain
  - E<sub>r</sub>* Eolian sandplain
  - E<sub>s</sub>* Unconsolidated, quartz dominated eolian sand overlying colluvium and/or alluvium



Colluvial units, third generation

- C1* Quartz and rock fragments in an unconsolidated silt and sand matrix; includes ferruginous deposits
  - C1c* Unconsolidated colluvium; deeply weathered rock fragments in a partly consolidated clay and sand matrix; reworked saprolite and saprock
  - C1f* Unconsolidated ferruginous rubble and scree
  - C1k* Calcrite, carbonate, and vuggy opaline silica rubble and scree in an unconsolidated, sandy carbonate-rich matrix
  - C1q* Unconsolidated quartz fragments in a silt and sand matrix, derived from quartz veins and quartzose rocks
  - C1z* Unconsolidated rubble and scree of silcrete and brecciated siliceous caprock
- Alluvial units, third generation**
- A1* Unconsolidated silt, sand, and gravel in active drainage channels and floodplains; includes ferruginous deposit
  - A1c* Unconsolidated silt, sand, and gravel in stream channels
  - A1r* Unconsolidated silt, sand, and minor gravel in floodplains adjacent to present-day drainage



Colluvial unit, second generation

- C2* Quartz and rock fragments in a partly consolidated silt and sand matrix

**NADARRA FORMATION:** silty micritic limestone; includes minor calcrite; muddy, commonly silicified; lacustrine; may extend into Pleistocene



Residual or relict units

- Rf* Ferruginous deposits, including lateritic, ferruginous, and manganiferous duricrust
- Rk* Calcrite, developed in, and adjacent to, alluvial channels; carbonate and vuggy opaline silica; dissected by major present-day drainage
- Rl* Saprolite and saprock of uncertain protolith
- Rz* Silcrete and brecciated siliceous caprock

**MERLINO SANDSTONE:** coarse-grained sandstone; lesser siltstone, conglomerate, and claystone; commonly intensely silicified

**BIRDROG SANDSTONE:** fine- to coarse-grained quartz sandstone, locally silty; commonly poorly consolidated, locally glauconitic

**BINTHALYA FORMATION:** grey to black siltstone and shale; interbedded sandstone

**MUNGADAN SANDSTONE:** fine- to coarse-grained sandstone, minor siltstone

**COOLKILYA SANDSTONE:** fine to very fine grained sandstone (commonly silty); minor siltstone and shale

**BAKER FORMATION:** siltstone and black shale; minor interbedded, fine-grained sandstone

**NALBIA SANDSTONE:** fine-grained sandstone; minor siltstone

**WANDAGEE FORMATION:** grey siltstone, lesser very fine grained sandstone, and shale

**QUINNANIE SHALE:** black shale, coarsening upward to grey siltstone; grades laterally into upper CUNDLEGO FORMATION

**CUNDLEGO FORMATION:** interbedded grey siltstone and fine- to medium-grained sandstone; commonly swaley cross-stratified

**BULGADOO SHALE:** black pyritic shale and mudstone; minor sandstone interbeds

**MALLENS SANDSTONE:** fine- to medium-grained sandstone; minor siltstone; characteristically intensely bioturbated

**COYRIE FORMATION:** black shale, siltstone, and sandstone in coarsening-upward succession

**BILLIDEE FORMATION:** grey siltstone; fine- to medium-grained sandstone; lesser black shale; minor granule to pebble conglomerate

**MOOGOOLoo SANDSTONE:** fine to very coarse grained quartz sandstone; minor siltstone and granule to pebble conglomerate

**CALLYTHARRA FORMATION:** fossiliferous, calcareous siltstone to calcisiltite; interbedded, hard fossiliferous calcarenite

Undivided; diamictite, sandstone and siltstone (locally calcareous), shale, and boulder beds and lags; glaciogene

**HARRIS FORMATION:** fine- to coarse-grained sandstone; minor siltstone and (near base) diamictite

**YINDAGINDY FORMATION:** quartzose, lithic, and calcareous sandstone; lesser calcilutite and calcarenite

**WILLIAMBURY FORMATION:** poorly sorted, silty lithic sandstone, pebble to cobble conglomerate; claystone

**MOOGOOREE LIMESTONE:** limestone and dolomite (wackstone, packstone, grainstone, and boundstone); minor calcareous sandstone

**WILLARADDIE FORMATION:** poorly sorted, commonly pebbly, lithic sandstone, and granule to pebble conglomerate; claystone

**MUNABIA SANDSTONE:** medium-grained quartz sandstone; minor siltstone, conglomerate, and dolomite

**GNEUDNA FORMATION:** calcareous siltstone, limestone (mostly packstone, commonly silty); siltstone, fine- to medium-grained sandstone

**NANNYARRA SANDSTONE:** fine- to coarse-grained sandstone; minor siltstone and claystone; local basal conglomerate



- zq* Quartz vein or pod; massive, crystalline, or brecciated; age uncertain
- zqx* Brecciated quartz vein; age uncertain

Mulka Tectonic Event (c.570 Ma)

**MUNDINE WELL DOLERITE SUITE:** dolerite dykes, sills, and small intrusions with locally abundant xenoliths and potassic alteration of wallrocks; includes minor quartz diorite, syenite, tonalite, and biotite monzogranite

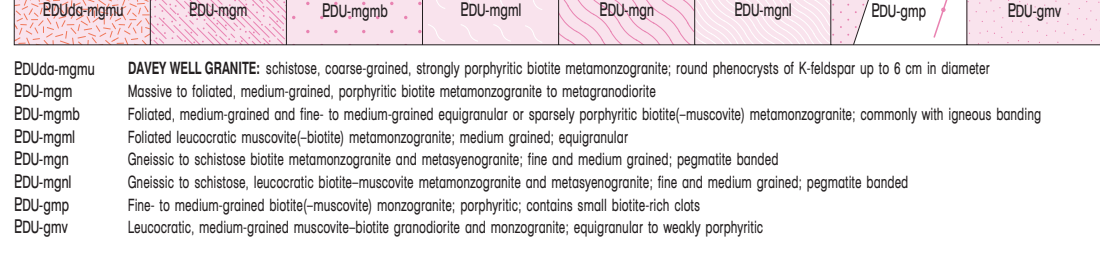
Edmundian Orogeny (1030-955 Ma) <sup>2</sup>

**ETT-gpvt** Muscovite-tourmaline pegmatite; some rare-element bearing

Matherbukin Tectonic Event (1280-1250 Ma)

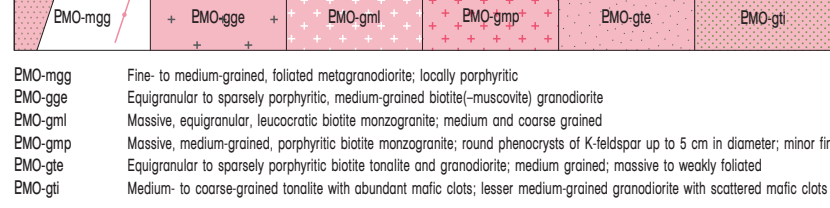
**EmodGA** Massive metadolerite and foliated amphibolite; fine and medium grained

Mangaroon Orogeny (1680-1620 Ma) <sup>3</sup>

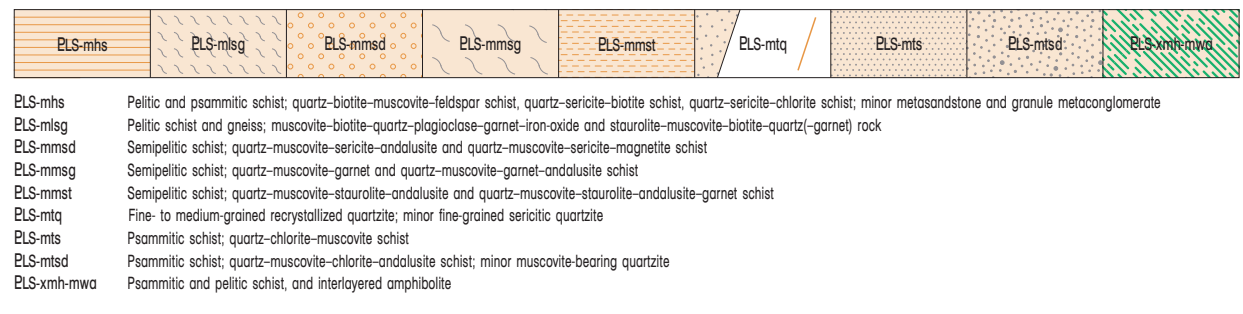


- EDUda-mgmu** DAVEY WELL GRANITE: schistose, coarse-grained, strongly porphyritic biotite metamonzogranite; round phenocrysts of K-feldspar up to 6 cm in diameter
- EDU-mgm** Massive to foliated, medium-grained, porphyritic biotite metamonzogranite to metagranodiorite
- EDU-mgmb** Foliated, medium-grained and fine- to medium-grained equigranular or sparsely porphyritic biotite(-muscovite) metamonzogranite; commonly with igneous banding
- EDU-mgml** Foliated leucocratic muscovite(-biotite) metamonzogranite; medium grained; equigranular
- EDU-mgn** Gneissic to schistose biotite metamonzogranite and metasyenogranite; fine and medium grained; pegmatite banded
- EDU-mgni** Gneissic to schistose, leucocratic biotite-muscovite metamonzogranite and metasyenogranite; fine and medium grained; pegmatite banded
- EDU-gmp** Fine- to medium-grained biotite(-muscovite) monzogranite; porphyritic; contains small biotite-rich clots
- EDU-gmv** Leucocratic, medium-grained muscovite-biotite granodiorite and monzogranite; equigranular to weakly porphyritic

Capricorn Orogeny (1820-1770 Ma) <sup>4</sup>



- EMO-mgg** Fine- to medium-grained, foliated metagranodiorite; locally porphyritic
- EMO-gge** Equigranular to sparsely porphyritic, medium-grained biotite(-muscovite) granodiorite
- EMO-gml** Massive, equigranular, leucocratic biotite monzogranite; medium and coarse grained
- EMO-gmp** Massive, medium-grained, porphyritic biotite monzogranite; round phenocrysts of K-feldspar up to 5 cm in diameter; minor fine- to medium-grained, sparsely porphyritic biotite monzogranite
- EMO-gte** Equigranular to sparsely porphyritic biotite tonalite and granodiorite; medium grained; massive to weakly foliated
- EMO-gti** Medium- to coarse-grained tonalite with abundant mafic clots; lesser medium-grained granodiorite with scattered mafic clots



- ELS-mhs** Pelitic and psammitic schist; quartz-biotite-muscovite-feldspar schist, quartz-sericite-biotite schist, quartz-sericite-chlorite schist; minor metasediment and granule metaconglomerate
- ELS-msg** Pelitic schist and gneiss; muscovite-biotite-quartz-plagioclase-garnet-iron-oxide and staurolite-muscovite-biotite-quartz(-garnet) rock
- ELS-mmsd** Sempelitic schist; quartz-muscovite-sericite-andalusite and quartz-muscovite-sericite-magnetite schist
- ELS-mmst** Sempelitic schist; quartz-muscovite-garnet and quartz-muscovite-garnet-andalusite schist
- ELS-mstq** Sempelitic schist; quartz-muscovite-staurolite-andalusite and quartz-muscovite-staurolite-andalusite-garnet schist
- ELS-mts** Fine- to medium-grained recrystallized quartzite; minor fine-grained sericitic quartzite
- ELS-mts.d** Psammitic schist; quartz-chlorite-muscovite schist
- ELS-xmh-nwa** Psammitic and pelitic schist, and interlayered amphibolite

Glenburgh Orogeny (2005-1950 Ma) <sup>5</sup>



**MUMBA PSAMMITITE:** metamorphosed quartz sandstone, granule metaconglomerate, and quartzite gneiss, locally micaceous; minor psammitic schist; locally with relict cross-bedding



- HALFWAY GNEISS**
- #zha-mgnl** Leucocratic granitic gneiss and foliated leucocratic metagranite; derived from biotite monzogranite and granodiorite
- #zha-mgnw** Mesocratic granitic gneiss; derived from variably porphyritic tonalite