

C	C <sub>a</sub>	C <sub>c</sub>	C <sub>cf</sub>	C <sub>f</sub>			
W	W <sub>pf</sub>	W <sub>i</sub>	W <sub>if</sub>	W <sub>c</sub>	W <sub>f</sub>	W <sub>k</sub>	W <sub>q</sub>
A	A <sub>i</sub>	A <sub>r</sub>	A <sub>f</sub>	A <sub>i</sub>			
A <sub>f</sub>	A <sub>v</sub>	A <sub>f</sub>	A <sub>k</sub>	A <sub>q</sub>			
L <sub>i</sub>	L <sub>w</sub>	S					

- Colluvial units, age undivided or unassigned**
- C Quartz and rock fragments in a silt and sand matrix; includes ferruginous deposits  
C<sub>a</sub> Colluvial fan; sand- or clay-rich  
C<sub>c</sub> Colluvium of clay-rich, deeply weathered and saprolitic rock fragments in silt and sand matrix; locally abundant siliceous debris  
C<sub>cf</sub> Clay-rich and ferruginous colluvium; commonly includes weathered and saprolitic rock fragments in silt and sand matrix; locally abundant siliceous debris  
C<sub>f</sub> Ferruginous rubble and scree
- Sheetwash units, age undivided or unassigned**
- W Sandy and clayey distal sheetwash and slope deposits; no clearly defined drainage  
W<sub>pf</sub> Predominantly ferruginous sandy and clayey distal sheetwash deposits with claypans and playas; locally abundant quartz vein debris  
W<sub>i</sub> Silt and sand; surface characterized by shallow depressions aligned perpendicular to slope; supports banded mosaic vegetation ('tiger bush')  
W<sub>if</sub> Ferruginous silt and sand; surface characterized by shallow depressions aligned perpendicular to slope; supports banded mosaic vegetation ('tiger bush')  
W<sub>c</sub> Clay, silt, and sand from saprolite and saprock  
W<sub>f</sub> Low-gradient deposits of ferruginous sand, silt, and gravel  
W<sub>k</sub> Distal sheetwash with calcrete cutans and carbonate cement  
W<sub>q</sub> Predominantly quartz-rich silt, sand, and gravel, derived from quartz veins and quartz-rich rock
- Alluvial units, age undivided or unassigned**
- A Clay, silt, sand, and gravel in channels and on floodplains  
A<sub>i</sub> Unconsolidated, fine-grained deposits in alluvial drainage depressions, claypans, ephemeral lakes, and swamps; low-lying areas with internal drainage; typically thickly vegetated  
A<sub>r</sub> Unconsolidated, fine-grained deposits on floodplains  
A<sub>f</sub> Unconsolidated, fine-grained ferruginous deposits on floodplains  
A<sub>i</sub> Unconsolidated, fine-grained deposits in alluvial drainage depressions, claypans, and ephemeral floodplain lakes; low-lying areas with internal drainage  
A<sub>f</sub> Ferruginous clay, silt, and sand in floodplain with numerous claypans  
A<sub>v</sub> Fan-shaped deposits of unconsolidated, fine-grained sand to boulders in fine-grained matrix on steep hill slopes  
A<sub>f</sub> Ferruginous clay, silt, sand, and gravel in channels and on floodplains  
A<sub>k</sub> Calcrete developed in and adjacent to alluvial channels  
A<sub>q</sub> Alluvium with abundant quartz vein fragments
- Lacustrine units, age undivided or unassigned**
- L<sub>i</sub> Fresh water lakes, excluding fringing deposits  
L<sub>w</sub> Clay and silt in swamp deposits, commonly surrounding lakes and clay ponds
- Sandplain unit, age undivided or unassigned**
- S Quartz sand of mixed origin; includes residual and eolian sands

C <sub>1</sub>	C <sub>1c</sub>	C <sub>1f</sub>	A <sub>1</sub>	A <sub>1a</sub>	A <sub>1af</sub>	A <sub>1f</sub>
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- Colluvial units, unconsolidated**
- C<sub>1</sub> Quartz and rock fragments in an unconsolidated silt and sand matrix; includes ferruginous deposits  
C<sub>1c</sub> Clay, quartz sand, and deeply weathered rock fragments; reworked saprolite and saprock  
C<sub>1f</sub> Unconsolidated ferruginous rubble and scree
- Alluvial units, unconsolidated**
- A<sub>1</sub> Unconsolidated silt, sand, and gravel in active drainage channels and floodplains; includes ferruginous deposits  
A<sub>1a</sub> Unconsolidated clay, silt, sand, and gravel on active alluvial plains  
A<sub>1af</sub> Unconsolidated, predominantly ferruginous clay, silt, sand, and gravel on active alluvial plains  
A<sub>1f</sub> Unconsolidated silt, sand, and minor gravel in floodplains adjacent to present-day drainage

C <sub>2</sub>	C <sub>2cf</sub>	C <sub>2f</sub>	A <sub>2</sub>	A <sub>2f</sub>
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- Colluvial units, weakly consolidated**
- C<sub>2</sub> Quartz and rock fragments in a partly consolidated silt and sand matrix  
C<sub>2cf</sub> Partly consolidated ferruginous colluvium; commonly includes weathered and saprolite rock fragments  
C<sub>2f</sub> Partly consolidated ferruginous rubble and scree
- Alluvial units, weakly consolidated**
- A<sub>2</sub> Partly consolidated silt, sand, and gravel; partly dissected by present-day drainage  
A<sub>2f</sub> Partly consolidated silt, sand, and minor gravel in older floodplain deposits, partly dissected

R <sub>f</sub>	R <sub>k</sub>	R <sub>l</sub>	R <sub>z</sub>	R <sub>if</sub>
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- Residual or relict units**
- R<sub>f</sub> Ferruginous deposits, including lateritic, ferruginous, and manganiferous duricrust  
R<sub>k</sub> Calcrete, developed in and adjacent to alluvial channels; carbonate and vuggy opaline silica; dissected by major present-day drainage  
R<sub>l</sub> Saprolite and saprock of uncertain protolith  
R<sub>z</sub> Silcrete and brecciated siliceous caprock  
R<sub>if</sub> In situ weathered rock; ferruginous

zq Quartz vein or pod; massive, crystalline, or brecciated; age uncertain

**Mulka Tectonic Event (c. 570 Ma)**

od Dolerite dykes, sills, or plugs; fine- to medium-grained dolerite; age uncertain

**Edmundian Orogeny (1030–955 Ma<sup>1</sup>)**

**EWKku-od** **KULKATHARRA DOLERITE:** dolerite and gabbro sills intruded into Edmund Group and Collier Group

EMCl-sl	<b>ILGARARI FORMATION</b> Siltstone, mudstone, and fine-grained sandstone
EMCl-cl	Chert and silicified siltstone

EMCc-st	<b>CALYIE FORMATION:</b> quartz sandstone, siltstone, mudstone, conglomerate, and dolostone
EMCc-sl	Siltstone and minor sandstone
EMCc-ss	Thin- to thick-bedded sandstone and siltstone

EMCb-sl	<b>BACKDOOR FORMATION:</b> siltstone, mudstone, and thin- to thick-bedded sandstone; minor chert and dolostone
EMCb-cl	Chert and siltstone
EMCb-ss	Thin- to thick-bedded sandstone and siltstone
EMCb-kd	Thin- to thick-bedded dololite, dolomitic siltstone, dolarenite, and siltstone (section only)

**Mutherbukin Tectonic Event (1385–1170 Ma)**

**BMEI-sl** **ULLAWARRA FORMATION:** siltstone; subordinate fine-grained sandstone, dolostone, and chert; intruded by numerous dolerite sills (section only)

PYMt-ss	<b>THADUNA FORMATION:</b> lithic sandstone; litharenite; shale; siltstone; and quartz wacke; locally containing fragments of basaltic scoria and thin volcanoclastic lenses; minor dolomite
PYWc-sl	<b>JOHNSON CAIRN FORMATION:</b> shale and siltstone; minor quartz arenite; feldspathic sandstone; and thin-bedded dolomite and marl

2660–2694 Ma <sup>7,8</sup>	AmgsbY	Biotite-rich metagranitic rock; variably schistose
2720 Ma <sup>5,6</sup>	AmgsY	Foliated metagranite, locally gneissic; may include amphibolite lenses; includes deeply weathered rock
	AmnYEG	Gneiss, undivided
	AsnYEG	Sedimentary rock, undivided; includes sandstone, siltstone, shale, chert, and minor schistose metamafic rock; metamorphosed; commonly deeply weathered
	AssYEG	Sandstone to siltstone; local conglomerate; metamorphosed
	AcibYEG	Banded iron-formation; finely interleaved magnetite- and quartz-rich chert and/or siliceous slate; metamorphosed
	AmbdYEG	Amphibolite; interlayered with metasilstone, metasandstone, and fine-grained mafic metavolcanic rock
	AmbriYEG	Komatiitic metabasalt; interlayered with chlorite-mica schist, graphitic schist, fine-grained metasandstone, and hematite-limonite metasilstone
	AmbYEG	Foliated, fine-grained, metamorphosed mafic rock; locally hornfelsed or epidotized
	AbbYEG	Basalt; locally porphyritic; metamorphosed; includes dolerite-textured zones and feldspar-hornblende or chlorite schist
	AmuYEG	Metamorphosed ultramafic rock; may include layered metamafic rocks, amphibolite, and graphitic schist

PHANEROZOIC

CENOZOIC

QUATERNARY

MESOPROTEROZOIC

PROTEROZOIC

PALEOPROTEROZOIC

ARCHEAN

MESOARCHEAN – NEOARCHEAN

WARAKURNA  
IGNEOUS PROVINCE

COLLIER BASIN

EDMUND BASIN

YERRIDA BASIN

EASTERN GOLDFIELDS SUPERTERRANE  
YILGARN CRATON