PHANEROZOIC

CENOZOIC

Unassigned

Ei | Sgrps

Eolian unit
Ei — Eolian sandplain with longitudinal (seif) dunes

Sandplain unit
Sgrps — Mixed eolian and eluvial sand; red-brown quartz sand in sheets; overlying and derived from granitic rocks

QUATERNARY

C1 | W1 | A1 | R1

Colluvial unit
C1 — Colluvial sand, silt, and gravel in outwash fans; scree and talus; proximal mass-wasting deposits; unconsolidated

Sheetwash unit
W1 — Silt, sand, and pebbles in distal sheetwash fans; no defined drainage

Alluvial unit
A1 — Alluvial sand, clay, silt, and gravel in active drainage areas

Residual or relict unit
R1 — Residual deposits derived from underlying bedrock; locally includes transported material

C2 | A2 | R2

Colluvial unit
C2 — Partly consolidated colluvial sand, silt, and gravel in proximal outwash fans; scree and talus; dissected by present-day drainage

Alluvial unit
A2 — Consolidated alluvial sand, silt, and gravel; dissected by present-day drainage

Residual or relict unit
R2 — Residual deposits derived from underlying bedrock; dissected by present-day drainage

PALEOGENE to NEOGENE

Noa-kt | C3

Noa-kt — **OAKOVER FORMATION:** undivided variably silicified limestone, silty limestone, calcareous sandstone, siltstone, and marl

Colluvial unit
C3 — Consolidated colluvial sand, silt, and gravel related to old land surface; dissected by present-day drainage

ENrb-cip — **ROBE PISOLITE:** pisolitic limonite, minor terrigenous siliciclastic material, goethite and hematite deposits; developed along paleodrainage lines; dissected by present-day drainage

R3

Residual or relict unit
R3 — Residual or relict deposit

PALEOZOIC

CARBONIFEROUS–PERMIAN

CPpa-sepg — **PATERSON FORMATION:** conglomerate (including diamictite), sandstone and siltstone; largely glacigene — CANNING BASIN

CAMBRIAN

c. 523 Ma[1]

€dv-od — **DAVIS DOLERITE:** fine- to medium-grained dolerite; in sills; contains magnetite; dashed where interpreted from aeromagnetic data

od | o | zq

od — Dolerite dyke, sill or plug; dashed where interpreted from aeromagnetic data
o — Dolerite or gabbro dyke of uncertain age; weakly metamorphosed
zq — Quartz vein; uncertain age

Paterson Orogeny (*c.* 550 Ma)

Miles Orogeny (720–650 Ma)

ᴇRH-od | ᴇMW-od

ᴇRH-od — **Round Hummock Dolerite Suite:** dolerite or gabbro dyke; dashed where interpreted from aeromagnetic data
ᴇMW-od — **Mundine Well Dolerite Suite:** dolerite dyke with locally abundant granitic xenoliths and potassic alteration of wallrocks; local syenite

PROTEROZOIC

NEOPROTEROZOIC

c. 755 Ma[2]

c. 820 Ma

Tarcunyah Group

ᴘTAo-kt — **WALTHA WOORA FORMATION:** stromatolitic dolostone, siltstone, shale, minor sandstone; discontinuous basal sandstone and conglomerate — OFFICER BASIN, CENTRALIAN SUPERBASIN

ᴘTAy-sk — **YANDANUNYAH FORMATION:** siltstone, shale, calcareous shale, locally stromatolitic carbonate

ᴘTAb-st — **BROWNRIGG SANDSTONE:** moderately to well-sorted, fine- to coarse-grained sandstone

ᴘTAw-klsv — **WAROONGUNYAH FORMATION:** dolostone, siltstone, shale, and sandstone; in part stromatolitic; evaporite pseudomorphs

ᴘTAg-sg — **GOOGHENAMA FORMATION:** sandstone and granule to pebble conglomerate

Lamil Group

ᴘLA-s — Undivided, quartz sandstone, conglomerate, carbonate, siltstone, shale, and pyritic shale — YENEENA BASIN, CENTRALIAN SUPERBASIN

Throssell Range Group

ᴘTHb-shh — **BROADHURST FORMATION:** carbonaceous shale and siltstone, pyritic and pyrrhotitic shale, siltstone, and fine-grained sandstone

ᴘTHc-stq — **COOLBRO SANDSTONE:** massive to thick-bedded quartz sandstone with minor siltstone and shale; local basal conglomerate (section only)

MESOPROTEROZOIC

Bangemall Supergroup

Manganese Group

1465–1070 Ma

ᴘMN-s — Undivided; sandstone, siltstone, mudstone, conglomerate, chert, and dolostone; includes intrusions of **DAVIS DOLERITE** — COLLIER BASIN

ᴘMNw-xsf-kds — **WOBLEGUN FORMATION:** interbedded shale, siltstone, sandstone, and conglomerate; local dolostone and stromatolitic dolostone

PALEOPROTEROZOIC

c. 1803 Ma

ᴘBG-gmh — **Bridget Suite:** hornblende monzogranite and granodiorite, micromonzonite, microsyenite, and micromonzodiorite; in small stocks

c. 1867 Ma[3]

ᴘp — Kimberlite dyke

ᴘpj-ccx — **PINJIAN CHERT BRECCIA:** chert breccia and poorly bedded chert; overlies **CARAWINE DOLOMITE**

AzqP — Quartz vein

ARCHEAN

Hamersley Group

2548–2541 Ma[4]

AHAc-kds — **CARAWINE DOLOMITE:** massive- to well-bedded, recrystallized dolostone, and stromatolitic dolostone; minor chert — HAMERSLEY BASIN

AHAc-kdx — Chaotic spherule-bearing megabreccia; angular, coarse- to fine-grained dolostone and chert clasts with a microkrystite- and microtectite-rich matrix

Mount Bruce Supergroup

Fortescue Group

AFO-od | AFO-mos

AFO-od — Dolerite dyke or sill
AFO-mos — Metamorphosed dolerite or gabbro sill; schistose

2690–2629 Ma[5, 6] — AFOj-sFOE — **JEERINAH FORMATION:** siliciclastic sedimentary rocks; local volcanic rocks, and dolerite sills — FORTESCUE BASIN

2718–2713 Ma[7] — AFOm-b — **MADDINA FORMATION:** massive, amygdaloidal, or vesicular basalt and basaltic andesite; local komatiitic basalt, dacite, and rhyolite

2729–2715 Ma[5, 7] — AFOt-xb-k — **TUMBIANA FORMATION:** basaltic volcanic rocks and carbonate rocks

2749–2735 Ma[7] — AFOk-b — **KYLENA FORMATION:** massive, amygdaloidal, or vesicular basalt and basaltic andesite; local komatiitic basalt, dacite, and rhyolite

c. 2752 Ma[7] — AFOh-xs-f — **HARDEY FORMATION:** sedimentary and felsic volcanic rocks; local intrusive rocks

c. 2764 Ma[5] — AFOhi-f

c. 2766 Ma — AFOhb-fr

Koongaling Volcanic Member: porphyritic and fine-grained dacite, rhyodacite, rhyolite lava
Bamboo Creek Member: rhyolite, rhyodacite, and dacite in flows and subvolcanic intrusions; alkali feldspar and quartz phenocrysts; volcanic breccia, welded ignimbrite, with accretionary lapilli; resedimented pyroclastic deposits

Gregory Range Suite

AGR-mg | AGR-gv

AGR-mg — Metamorphosed granitic rocks; foliated and gneissic
AGR-gv — Granophyre; locally includes gneissic granophyre, and granophyric gneiss

c. 2772 Ma[8] — AFOr-b — **MOUNT ROE BASALT:** basaltic volcanic rocks; local volcaniclastic and siliciclastic rocks

ABL-od — **Black Range Dolerite Suite:** dolerite dyke; local gabbro; weakly metamorphosed

ARCHEAN

Unassigned

AmdslP | AmoaP

AmdslP — Schistose metasedimentary rock; quartz–muscovite–biotite–sillimanite(–cordierite) assemblages; locally metamorphosed quartz-pebble conglomerate
AmoaP — Amphibolite; metamorphosed dolerite and gabbro, in sills and dykes

AodP — Dolerite, in dykes and sills, fine- to medium-grained; weakly metamorphosed

Split Rock Supersuite

ASRmo-gm | ASRbo-gm | ASRco-gm | ASRmn-gm

c. 2831 Ma — ASRmo-gm — **MOOLYELLA MONZOGRANITE:** muscovite–biotite monzogranite, medium grained; massive to weakly foliated
c. 2838 Ma — ASRbo-gm — **BONNEY DOWNS GRANITE:** monzogranite, medium grained, sparsely porphyritic; locally muscovite bearing
ASRco-gm — **COOKES CREEK MONZOGRANITE:** monzogranite, fine- to medium-grained, biotite-bearing, seriate to feldspar-phyric; intruded by quartz–barite veins
ASRmn-gm — **MONDANA MONZOGRANITE:** massive leucocratic monzogranite; very fine to medium grained; quartz-rich, minor biotite; equigranular to sparsely feldspar-phyric; metamorphosed

Mosquito Creek Orogeny (*c.* 2905 Ma)

De Grey Supergroup

Nullagine Group

<2950 Ma

ANUq-mh — **MOSQUITO CREEK FORMATION:** metamorphosed sandstone, siltstone, and shale; graded bedding and local cross-bedding; includes metamorphosed turbidite deposits — MOSQUITO CREEK BASIN, DE GREY SUPERBASIN

ANUc-xmd-mw — **COONDAMAR FORMATION:** metamorphosed siliciclastic and mafic igneous rocks

Gorge Creek Group

AGC-s — Unassigned sandstone, siltstone, and conglomerate; metamorphosed — GORGE CREEK BASIN, DE GREY SUPERBASIN

c. 3020 Ma — AGCe-cq — **CLEAVERVILLE FORMATION:** chert and banded iron-formation; minor felsic volcaniclastic rock; metamorphosed

AGCf-stq — **FARREL QUARTZITE:** quartz sandstone and quartzite; locally fuchsitic; minor conglomerate and chert; metamorphosed

Mount Billroth Supersuite

3199–3178 Ma — AMBge-mgtn — **GOLDEN EAGLE ORTHOGNEISS:** layered orthogneiss derived from tonalite, granodiorite, monzogranite, and pegmatite; includes layers and lenses of amphibolite and ultramafic schist — Kurrana Terrane

AxmaPKU — Metamorphosed mafic and ultramafic intrusive rocks

Rifting event (*c.* 3200 Ma)

Pilbara Supergroup

Sulphur Springs Group

ADA-xo-a — **Dalton Suite:** mafic and ultramafic intrusive rocks; metamorphosed

<3228 Ma — ASSb-xs-f — **BUDJAN CREEK FORMATION:** siliciclastic and felsic volcaniclastic rocks; local basalt; metamorphosed

Cleland Supersuite

ACEbi-gm | ACEbu-gm | ACEmi-gm | ACElr-gtl

3246–3241 Ma — ACEbi-gm — **BISHOP CREEK MONZOGRANITE:** biotite-monzogranite to granodiorite and syenogranite; fine- to coarse-grained; locally seriate and porphyritic; rare pegmatite dykes; weakly metamorphosed
ACEbu-gm — **BULLGARINA MONZOGRANITE:** biotite(–muscovite) monzogranite, medium- to coarse-grained; weakly metamorphosed
ACEmi-gm — **MIDGENGADGI MONZOGRANITE:** biotite monzogranite; seriate to porphyritic; medium- to coarse-grained; weakly metamorphosed
ACElr-gtl — **LITTLE RIVER TRONDHJEMITE:** quartz–biotite trondhjemite and tonalite; leucocratic, massive, fine- to medium-grained; weakly metamorphosed

Emu Pool event (*c.* 3290 Ma)

Emu Pool Supersuite

AEMel-mgtn | AEMzu-gg | AEMch-gt | AEMwa-gt | AEMml-gg | AEMmu-gm | AEMca-gmp | AEMgo-gg* | AEMco-gg | AEMbo-gmap | AEMke-gg | AEMda-gr | AEMce-mgg | AEMjo-gg* | AEMwi-gg

3299–3290 Ma — AEMel-mgtn — **ELSIE CREEK TONALITE:** metamorphosed, foliated to gneissic, biotite tonalite and granodiorite; minor monzogranite
3299–3294 Ma — AEMzu-gg — **ZULU GRANODIORITE:** biotite granodiorite, locally includes tonalite and monzogranite; medium- to coarse-grained, weakly foliated; metamorphosed
AEMch-gt — **CHIMINGADGI TRONDHJEMITE:** biotite trondhjemite; medium grained, massive, even grained; metamorphosed
AEMwa-gt — **WALGUNYA TRONDHJEMITE:** quartz-rich biotite trondhjemite; medium- to coarse-grained; metamorphosed
c. 3308 Ma — AEMml-gg — **MULLUGUNYA GRANODIORITE:** biotite–hornblende granodiorite; medium grained, weakly foliated; metamorphosed
c. 3310 Ma — AEMmu-gm — **MUNGANBRINA MONZOGRANITE:** monzogranite, banded, medium- to coarse-grained; locally seriate to porphyritic, and weakly foliated; metamorphosed
c. 3311 Ma — AEMca-gmp — **CARBANA MONZOGRANITE:** biotite monzogranite; porphyritic; local mafic xenoliths; metamorphosed
c. 3313 Ma[9] — AEMgo-gg — **GOBBOS GRANODIORITE:** biotite granodiorite and monzogranite, with minor hornblende; medium grained, seriate to locally porphyritic; metamorphosed
c. 3314 Ma[10] — AEMco-gg — **COPPIN GAP GRANODIORITE:** biotite granodiorite and tonalite; medium grained, massive to seriate, weakly foliated; local mafic xenoliths; metamorphosed
c. 3315 Ma[9] — AEMbo-gmap — **BOOBINA PORPHYRY:** quartz–feldspar porphyry; minor hornblende; metamorphosed
c. 3315 Ma[11] — AEMke-gg — **KENNELL GRANODIORITE:** biotite–hornblende granodiorite, locally includes monzogranite and tonalite; medium grained, seriate, weakly foliated; small mafic xenoliths and schlieren locally common; metamorphosed
AEMda-gr — **DAVITT SYENOGRANITE:** muscovite–garnet syenogranite; medium grained, foliated; metamorphosed
3318–3314 Ma — AEMce-mgg — **CHESSMAN GRANODIORITE:** metamorphosed biotite granodiorite and tonalite; medium- to coarse-grained; strongly foliated to gneissic
3321–3304 Ma[10] — AEMjo-gg — **JOORINA GRANODIORITE:** biotite granodiorite, locally includes tonalite and monzogranite; medium- to coarse-grained, locally seriate and porphyritic; weakly to moderately foliated; mafic xenoliths; metamorphosed
3324–3310 Ma[12] — AEMwi-gg — **WILINA GRANODIORITE:** quartz-rich biotite granodiorite and trondhjemite; medium grained; weakly foliated; metamorphosed — East Pilbara Terrane, PILBARA CRATON

Pilbara Supergroup

API-mat — Serpentinite, serpentine–talc schist, and ultramafic schist

Kelly Group

AKEc-b — **CHARTERIS BASALT:** basalt and basaltic komatiite; minor dolerite sills, chert, and felsic volcanic rocks; metamorphosed

3325–3315 Ma[13] — AKEw-f — **WYMAN FORMATION:** felsic volcanic rock; local basalt; metamorphosed

c. 3350 Ma — AKEe-b — **EURO BASALT:** basalt, komatiitic basalt, and serpentinized peridotite; local dolerite and gabbro sills; minor felsic volcaniclastic rocks and chert; metamorphosed

AKEs-cc — **STRELLEY POOL CHERT:** white, grey, and blue-black layered chert; local wavy laminated sandstone, and felsic volcaniclastic rocks; chert, partly silicified bedded carbonate rocks, locally stromatolitic; metamorphosed

Warrawoona event (*c.* 3410 Ma)

Warrawoona Group

Salgash Subgroup

3433–3427 Ma[14] — AWAp-f — **PANORAMA FORMATION:** felsic volcanic rock; local sedimentary rock; metamorphosed

AWAa-b — **APEX BASALT:** basalt, komatiitic basalt, and serpentinized peridotite; local dolerite sills; minor felsic volcaniclastic rocks and chert; metamorphosed

Coongan Subgroup

c. 3465 Ma[15] — AWAd-f — **DUFFER FORMATION:** felsic volcanic rock; local basalt, chert, and felsic schist; metamorphosed (section only)

AWAd-mfds — Quartzofeldspathic and quartz–muscovite–biotite–andalusite–staurolite schist; sheared dacitic lava and felsic volcaniclastic rocks

AWAm-b — **MOUNT ADA BASALT:** mafic volcanic rocks; local ultramafic rocks; metamorphosed

Tambina Supersuite

c. 3429 Ma

ATAft-mgtn | ATAla-mggn

ATAft-mgtn — **FIG TREE GNEISS:** banded tonalite, granodiorite, and local trondhjemite, monzogranite and syenogranite gneiss, and migmatite
ATAla-mggn — **LADY ADELAIDE ORTHOGNEISS:** orthogneiss after granodiorite; leucocratic; fine- to medium-grained

Callina Supersuite

c. 3465 Ma

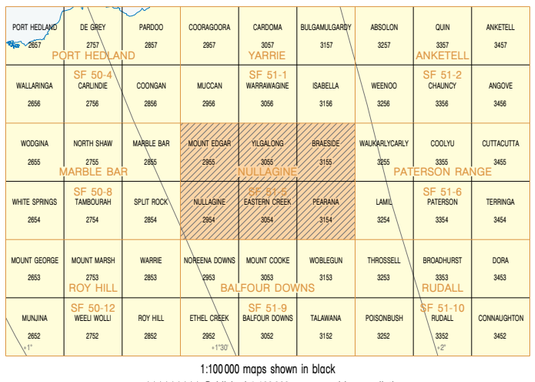
ACLho-gfap | ACLun-mgtn

HOMEWARD BOUND GRANITE
ACLho-gfap — Subvolcanic intrusions of porphyritic rhyolite and dacite euhedral feldspar and quartz phenocrysts; typically in a dark grey fine-grained to glassy matrix; metamorphosed

c. 3462 Ma

ACLun-mgtn — **UNDERWOOD GNEISS:** banded tonalite, granodiorite, and monzogranite gneiss and migmatite; strongly sheared, S-C mylonite fabric

SHEET INDEX



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Annual change is 2' easterly