MINERAL RESOURCES TASMANIA

GEOLOGY OF NORTHWEST TASMANIA

SCALE 1:250000

0 5 10 15 20 25km

AGD66 - AMG Zone 55.

MINERAL RESOURCES TASMANIA

Tasmania

DEPARTMENT of INFRASTRUCTURE ENERGY and RESOURCES

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Base data from the LIST, © State of Tasmania.

Map produced by Data Management Branch using G.I.S. software.

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CALVER, C.R.; CORBETT, K.D.; EVERARD, J.L.; GOSCOMBE, B.A.; PEMBERTON, J.; SEYMOUR, D.B.; VICARY, M.J.; (comp.). 2005. Geology of Northwest Tasmania. Edition 2009.1. Geological Atlas 1:250,000 digital series. Mineral Resources Tasmania.

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CAINOZOIC

QUATERNARY (HOLOCENE; PLEISTOCENE)

- Qh — Sand, gravel, and mud of alluvial, lacustrine and littoral origin (Qh).
- Qe — Glacial, periglacial and fluvioglacial sediments including till and interglacial deposits (Qg); talus, vegetated and active (Qpt); glacial and glacigene deposits (Qpg); coastal sand and gravel (Qps); limestone (Qp).
- Qg
- Qpt
- Qpg
- Qps
- Qp
- Qpl

Erosional surface

TERTIARY

- Tm — Dominantly non-marine sequences of sand, gravel, silt, clay and regolith (Ts); marine limestone (Tm); basalt (tholeiitic to alkalic) and related volcaniclastic rocks (Tb).
- Ts
- Tb

Erosional surface.

MESOZOIC

TRIASSIC

- R — Undifferentiated fluviolacustrine sequences of sandstone, siltstone and mudstone (R).

PERMIAN

- Pu — Upper glaciomarine sequences of pebbly mudstone, pebbly sandstone and limestone (Pu).
- P — Freshwater and paralic sandstone and mudstone with some coal measures (Pf).

LATE CARBONIFEROUS

- Pl — Lower glaciomarine sequences of mudstone, pebbly mudstone, pebbly sandstone, minor limestone and tasmanite oil shale (Pl); basalt (tholeiitic to alkalic) and related volcaniclastic rocks (Pb).
- Pb

UPPER / LOWER — PARMEENER SUPERGROUP

Erosional surface.

Terrestrial cavern fillings (Eugenana Beds) (Dc).

Angular unconformity attributed to major polyphase orogeny.

PALAEOZOIC

LATE MIDDLE DEVONIAN

Angular unconformity.

EARLY DEVONIAN–SILURIAN

ELDON GROUP

- SDs — Siltstone, shale and fine-grained sandstone (Bell Shale and correlates) (SDs).
- SD — Shallow marine quartz sandstone (Florence Quartzite and correlates) (SD).
- SDp — Siltstone, shale and minor quartz sandstone (Amber Slate, Keel Quartzite, Austral Creek Siltstone and correlates) (SDp).
- SDc — Shallow marine quartz sandstone and pebble conglomerate (Crotty Quartzite and correlates) (SDc).

ORDOVICIAN

WURAWINA SUPERGROUP

- Ds — Dominantly shallow marine limestone with minor siltstone and sandstone (Gordon Group) (Ds).

OWEN GROUP

- Ꞓ — Undifferentiated or poorly constrained conglomerate–sandstone sequences of Late Cambrian to Ordovician age (Ꞓ).
- Ꞓs — Shallow marine sandstone–mudstone +/- conglomerate +/- limestone. Ordovician fossils and trace fossils in places. Includes Moina Sandstone, Pioneer Beds (Ꞓs). Unconformably on older rocks in places.
- Ꞓc — Shallow marine sandstone, typically pink, cross-bedded to thin-bedded, with minor siltstone and conglomerate. Includes Upper Owen Sandstone (Ꞓc); Basalt lava (Ꞓb).
- Ꞓo — Mainly siliciclastic conglomerate with sandstone interbeds, shallow marine to non-marine, pebble to boulder grade. Includes Middle Owen Conglomerate, Dial Conglomerate, Roland Conglomerate (Ꞓo).
- Ꞓm — Marine sandstone–siltstone–conglomerate sequences, typically tuhalitic, siliciclastic to polymictic. Late Cambrian fossils in places. Includes Upper Dundas Group, Upper Owen Sandstone, upper Dundas Group, much of Rosebery Group (Ꞓm).

Diachronous contacts; angular unconformity in some areas, apparent conformity in others.

LATE CAMBRIAN

SMITHTON –ROCKY CAPE REGION

- Ꞓm — Polymict conglomerate, lithicwacke, siltstone and mudstone with rare molluscan fossils (Scopus Formation) (Ꞓm).

Inferred disconformity

TULLAH –DIAL RANGE –FOSSEY MOUNTAINS REGION

MITREAD VOLCANICS

- Ꞓds — Dominantly sedimentary sequences with minor volcanic and volcaniclastic units (Ꞓds).
- Ꞓb — Upper sequence of felsic to intermediate volcaniclastic and volcanic rocks, and mafic volcanics, of late Middle Cambrian age. Tyndall Group rock correlates (Ꞓdt). Felsic lavas within Tyndall Group (Ꞓdtl).
- Ꞓdt — Andesitic lavas, breccias and intrusive rocks. Includes Que–Hellyer Volcanics, Beulah andesite (Ꞓdo).
- Ꞓdtl — Dominantly volcano-sedimentary sequences with some felsic to intermediate volcanic rocks; Middle Cambrian fossils in places. Western Volcano-Sedimentary sequences, Mt Charter Group, Gog Range Greywacke (Ꞓdsv).
- Ꞓdsv — Basaltic volcanics and minor intrusives(Ꞓdb).
- Ꞓdo — Felsic lavas within Western Volcano-Sedimentary sequence (Ꞓdsvl).
- Ꞓdb — Dominantly felsic to intermediate volcanic rocks, typically massive, feldspar-phyric. Central Volcanic Complex (Ꞓdv).
- Ꞓdsvl — Dominantly felsic volcanic, volcaniclastic and intrusive rocks, typically quartz-feldspar-phyric. Eastern Quartz-Phyric Sequence and correlates (Ꞓdq).
- Ꞓdv — Siliciclastic sandstone–siltstone–conglomerate units of metamorphic derivation. Includes Slicht Range Beds, Animal Creek Greywacke (Ꞓdsg).
- Ꞓdq

? EARLY CAMBRIAN

- Ꞓs — Layered peridotite, serpentinite and associated rocks (Ꞓs); tonalite and associated rocks (Ꞓt); undifferentiated low–Ti tholeiitic and boninitic lavas (Ꞓb). Structurally emplaced.
- Ꞓt
- Ꞓb
- Ꞓm — Mafic volcaniclastic sandstone–siltstone–mudstone–chert–minor carbonate sequences, with intercalated tholeiitic basalt flows. Considered allochthonous. Cleveland–Moraton Association and correlates (Ꞓcw). Tholeiitic basalt and picrite units (Ꞓcwb). Chert–rich sequences, including Burlington Chert (Ꞓcwc).
- Ꞓcw
- Ꞓcwb
- Ꞓcwc

LATE NEOPROTEROZOIC

ARTHUR METAMORPHIC COMPLEX

TOGARI GROUP, ARTHUR'S GROUP

- Pzc — Pale–weathering, thin bedded, laminated quartz siltstone with subordinate interbedded fissile shale, commonly silicified (Salmon River Siltstone).
- Pzd — Shallow–marine dolomite and minor limestone (Smithton Dolomite and correlates) (Pzd).
- Pzs — Turbidite mudstone, siltstone, lithicwacke and olomictite with minor conglomerate detritus (Pzs); tholeiitic basalt (Spinks Creek Volcanics, Bernafai Volcanics and correlates) (Pzb).
- Pzb — Shallow marine dolomite, chert, shale and diamictite (Black River Dolomite, Savage Dolomite and correlates) (Pzd); siliceous conglomerate and sandstone (Forest Conglomerate and Quartzite, Donaldson Formation and correlates) (Pzc).
- Pzc — Low–angle unconformity or inferred disconformity.

- Pzc — Chloritic schist, with minor phyllite, dolomite and magnesite (Pzc); amphibolite (Pzo).
- Pzd
- Pzo — Phyllite with minor pelitic schist, foliated basalt, dolomite, and rare conglomerate (Pzp).
- Pzp
- Pzt — Quartz mica schist, phyllite, quartzite and rare dolomite (Keith Schist and correlates) (Pzt).

TYENNAN AND SIMILAR REGIONS

ROCKY CAPE GROUP

- Pzs — Shallow marine to perilidal, well-bedded, cross-bedded orthoquartzite, platy quartzite and siltstone (Jacob Quartzite) (Pzj).
- Pzv — Shallow marine laminated grey siltstone, mudstone and dolomite (Hay Siltstone) (Pzv).
- Pzd — Shallow marine to perilidal, well-bedded, cross-bedded orthoquartzite and subordinate siltstone (Detention Subgroup) (Pzd).
- Pzc — Interbedded cross-bedded quartz sandstone and marine siltstone and mudstone (Tyenna Siltstone and similar sequences) (Pzc).
- Pzb — Interbedded cross-bedded quartz sandstone and siliceous–carbonaceous siltstone, fining up to laminated chloritic siltstone (Balfour Subgroup) (Pzb).
- Pzr — Parallel-to cross-bedded quartz sandstone with rare siltstone and carbonaceous shale (Lagoon River Quartzite) (Pzr).
- Pzw — Interbedded to interlaminated siltstone and quartz siltstone–sandstone with erosional structures, grading and cross–lamination (Pedder River Siltstone) (Pzp).
- Pzs — Unassigned quartzite sequences (Pzs).

- Pzs — Undifferentiated metasedimentary sequences, with greenschist facies metamorphism (Pt).
- Pt — Dominantly quartzite sequences (Pts).
- Pts — Dominantly pelitic sequences, mainly phyllite (Ptp).
- Ptp — Dominantly schistose conglomerate (Goat Island Conglomerate and correlates) (Ptg).
- Ptg

Angular unconformity.

- Pzq — Quartzwacke turbidite sequences with minor dolomite (Pzq); quartzwacke of high–grade metamorphic provenance (Pzq).
- Pzd — Dolomitic mudstone, siltstone and sandstone (Pzd). (Burnie and Oonah Formations and correlates).
- Pzo — Alkali basalt and dolerite (within Burnie and Oonah Formations, includes Cooee Dolerite) (Pzo).

NEOPROTEROZOIC – MESOPROTEROZOIC

- Pzv — Shallow marine to perilidal, well-bedded, cross-bedded orthoquartzite and subordinate siltstone (Detention Subgroup) (Pzd).
- Pzd — Shallow marine laminated grey siltstone, mudstone and dolomite (Hay Siltstone) (Pzv).
- Pzc — Interbedded cross-bedded quartz sandstone and marine siltstone and mudstone (Tyenna Siltstone and similar sequences) (Pzc).
- Pzb — Interbedded cross-bedded quartz sandstone and siliceous–carbonaceous siltstone, fining up to laminated chloritic siltstone (Balfour Subgroup) (Pzb).
- Pzr — Parallel-to cross-bedded quartz sandstone with rare siltstone and carbonaceous shale (Lagoon River Quartzite) (Pzr).
- Pzw — Interbedded to interlaminated siltstone and quartz siltstone–sandstone with erosional structures, grading and cross–lamination (Pedder River Siltstone) (Pzp).
- Pzs — Unassigned quartzite sequences (Pzs).

PROTEROZOIC

- Pzq — Quartzwacke turbidite sequences with minor dolomite (Pzq); quartzwacke of high–grade metamorphic provenance (Pzq).
- Pzd — Dolomitic mudstone, siltstone and sandstone (Pzd). (Burnie and Oonah Formations and correlates).
- Pzo — Alkali basalt and dolerite (within Burnie and Oonah Formations, includes Cooee Dolerite) (Pzo).

Strike and dip of bedding; right way up; overturned; facing unknown; vertical with facing unknown; horizontal.

Strike and dip of cleavage; dipping; vertical.

Strike and dip of crenulation cleavage; dipping; vertical.

Strike and dip of schistosity or metamorphic foliation; dipping; vertical.

Direction and plunge of hinge line of minor fold: unspecified age; folding cleavage or schistosity.

Strike and dip of igneous mineral foliation; dipping; vertical; trend of foliation trace on horizontal surface.

Geological boundary.

Fault.

Wrench fault with relative displacement indicated.

Concealed fault.

Axial trace of major antiform.

Axial trace of major synform.

Axial trace of overturned major antiform.

Axial surface of overturned major synform.

Form lines.

IGNEOUS ROCKS

TERTIARY

- Tb — Basalt (tholeiitic to alkalic) and related volcaniclastic rocks (Tb).

JURASSIC

- Jd — Dolerite (tholeiitic) with locally developed granophyre (Jd).

EARLY CARBONIFEROUS –LATE DEVONIAN

- Dgm — Undifferentiated granitic rocks (Dg); undifferentiated dmgt–feldspar granite/granite/adamellite, i–type (Dgs); S–type (Dgss); dominantly dmgt–feldspar granite, i–type (Dgst); S–type (Dgsts), dominantly adamellite/granite, i–type (Dgsa); S–type (Dgsas).
- Dgst
- Dgsa
- Dgss
- Dgsas
- Dgn — Dominantly granodiorite/adamellite, i–type (Dgn).

ORDOVICIAN

- Ꞓdg — Tholeiitic basalt (Mt Tor area; upper Wilmot River) (Ꞓdg).
- Ꞓdb — Tholeiitic dolerite (Black Bluff Range) (Ꞓdb).

MIDDLE – LATE CAMBRIAN

MITREAD VOLCANICS (MITRE PART) AND ASSOCIATED INTRUSIVES

- Ꞓdt — Felsic lavas within Tyndall Group (Ꞓdtl).
- Ꞓdtl
- Ꞓdsvl — Felsic lavas within Western Volcano–Sedimentary Sequence (Ꞓdsvl).
- Ꞓdsv — Basaltic volcanics and minor intrusives (including Hellyer basalt) (Ꞓdb).
- Ꞓdb
- Ꞓdo — Andesitic lavas, breccias and intrusive rocks (Ꞓdo).
- Ꞓdbl — Major andesitic intrusive bodies, includes 'Beulah Granite' and Lobster Creek Intrusives (Ꞓdbl).
- Ꞓdc — Felsic to intermediate volcanic rocks (Central Volcanic Complex of Mt Read Volcanics) (Ꞓdv).
- Ꞓdq — Quartz feldspar porphyry (Ꞓdq).
- Ꞓg — Granite, (includes Dove Granite) (Ꞓgr).
- Ꞓdd — Tholeiitic dolerite (Mt Charter area; upper Leven River); dolerite (Wilmot area) and basalt (Gog Range area) (Ꞓdd).
- Ꞓc — Gabbroic rocks (Ꞓg).
- Ꞓcb — Boninitic lavas (Ꞓbo).
- Ꞓct — Low–Ti tholeiitic lavas (Ꞓbt).

? EARLY CAMBRIAN

- Ꞓt — Tonalite and associated rocks (Ꞓt).
- Ꞓsp — Layered peridotite, serpentinite and associated rocks (Ꞓs); dominantly serpentinised layered dunite on Cape Grim Peninsula (Ꞓsd); dominantly layered pyroxenite and dunite ('LPD association') (Ꞓsp).
- Ꞓp
- Ꞓcw — Tholeiitic basalt (within Cleveland–Moraton association and correlates; includes 'Motton Spilite') (Ꞓcwb).
- Ꞓdo — Tholeiitic basalt (Spinks Creek Volcanics, Bernafai Volcanics and correlates) (Pzb).
- Ꞓdc — Tholeiitic dolerite dykes (Rocky Cape Dyke Swarm) (Pm).
- Ꞓdb — Alkali basalt and dolerite (within Burnie and Oonah Formations; includes Cooee Dolerite) (Pzo).
- Pzo — Amphibolite (Arthur Metamorphic Complex) (Pzo).
- Pzg — Granitic rocks (on King Island) (Pg).

SOURCE MAPPING

- Geological Survey mapping (1:25,000 or more detailed scale).
- Geological Survey mapping (1:50,000 scale) and unpublished compilation Geological Survey mapping (1:10,000 –1:50,000 scale).
- Geological Survey mapping (1:63,360 scale) after 1965.
- Geological Survey mapping (1:63,360 scale) before 1965.
- Other mapping (1:63,360 or more detailed scale).
- Geological Survey mapping (1:100,000 scale)
- Reconnaissance scale mapping, and/or interpretation based on air photo and/or geophysical data without ground control from various sources.

SOURCES
Source information for this map is available as an additional sheet.

LOCATION DIAGRAM

NORTHWEST | NORTHEAST | SOUTHWEST | SOUTHEAST

WARNING: INKS ARE LIGHT SENSITIVE

THIS MAP IS EDITION 2009.1
BASED ON A STATEWIDE DATASET
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