Tasmanian Government

Department of State Growth

MINERAL RESOURCES TASMANIA

GEOLOGY OF NORTHWEST TASMANIA

SCALE 1:250000

0 5 10 15 20 25km

300000mE 350000mE 400000mE 450000mE

5600000mN 5550000mN 5500000mN 5450000mN 5400000mN

250000mE

CAPE WICKHAM
Cape Farewell
Disappointment Bay
PHOQUES BAY
New Year Is
Christmas Is
Lavinia Pt
Whister Pt
KING ISLAND
Cowper Pt
SEA ELEPHANT BAY
Fraser Bluff
Grassy
Bold Head
Grassy Bay
Fitzmaurice Bay
Cataraqui Pt
Seal Pt
Surprise Bay
Scott Bay
STOKES POINT

CENOZOIC

QUATERNARY

HOLOCENE

Qh — Sand, gravel, and mud of alluvial, lacustrine and littoral origin (Qh).

PLEISTOCENE — Q

Qg, Qpg, Qpa, Qpl — Glacial, periglacial and fluvioglacial sediments including till and interglacial deposits (Qg); talus, vegetated and active (Qpr); glacial and glacigene deposits (Qpg); coastal sand and gravel (Qpa); limestone (Qpl).

Erosional surface

PALEOGENE–NEOGENE

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

Erosional surface.

MESOZOIC

TRIA–JURASSIC

R, Pu, P, Pl, Pf — Undifferentiated fluviolacustrine sequences of sandstone, siltstone and mudstone (R).

Upper glaciomarine sequences of pebbly mudstone, pebbly sandstone and limestone (Pu).

Freshwater and paralic sandstone and mudstone with some coal measures (Pf).

Lower glaciomarine sequences of mudstone, pebbly mudstone, pebbly sandstone, minor limestone and tasmanite oil shale (Pl); basal tillite (Pf).

LOWER – UPPER PARMENEER SUPERGROUP

Angular unconformity.

PALEOZOIC

DEVONIAN – SILURIAN

SDb, SDl, SDs, SDc — Siltstone, shale and fine-grained sandstone (Bell Shale and correlates) (SDb).

Shallow marine quartz sandstone (Florence Quartzite and correlates) (SDl).

Siltstone, shale and minor quartz sandstone (Amber Slate, Keel Quartzite, Austral Creek Siltstone and correlates) (SDs).

Shallow marine quartz sandstone and pebble conglomerate (Crotty Quartzite and correlates) (SDc).

ELDON GROUP

ORDOVICIAN

Ol, Os, COs, COc, COmq — Dominantly shallow marine limestone with minor siltstone and sandstone (Gordon Group) (Ol).

Undifferentiated or poorly constrained conglomerate–sandstone sequences of Furongian to Ordovician age (CO).

Shallow marine sandstone–mudstone +/– conglomerate +/– limestone. Ordovician fossils and trace fossils in places. Includes Moina Sandstone, Pioneer Beds (Os). Unconformly on older rocks in places.

Shallow marine sandstone, typically pink, cross-bedded to thin–bedded, with some siltstone and minor conglomerate. Includes Upper Owen Sandstone (COs). Basalt lava (COb).

Mainly siliciclastic conglomerate with sandstone interbeds, shallow marine to fluvial. Includes Lower Owen Conglomerate, Middle Owen Conglomerate, Dial Conglomerate, Roland Conglomerate (COc).

Marine sandstone–siltstone–conglomerate sequences, typically lithilitic, siliciclastic to polymict. Furongian fossils in places. Includes Newton Creek Sandstone, Middle Owen Sandstone, upper Dundas Group, much of Mossbery Group (COmq).

GORDON GROUP — WARRAWANA SUPERGROUP

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

CAMBRIAN

FURONGIAN

Cm — Polymict conglomerate, lithicwacke, siltstone and mudstone with orthoquartzite clasts (Scopus Formation) (Cm).

Inferred disconformity

CAMBRIAN SERIES 3

Cds, Cdxut, Cdsv, Cds, CDds, CDdc, Cdp, Cdv, Cdvu, Cdq, Cdqp, Cdqf, Cdqv, Cdqc — Dominantly sedimentary sequences with minor volcanic and volcaniclastic units (Cds).

Upper, sedimentary to intermediate volcaniclastic and volcanic units, sedimentary units, of Cambrian Series 3 age. Tyndall Group and correlates (Cdt). Felsic lavas within Tyndall (Cdtl).

Andesitic lavas, breccias and intrusive rocks. Includes Que–Hellyer Volcanics, Beulah andesite (Cda).

Dominantly volcano–sedimentary sequences with some felsic to intermediate volcanic rocks; Cambrian Series 3 fossils in places. Western Volcano–Sedimentary sequences, Mt Charter Group, Gog Range Greywacke (Cdsv).

Basaltic volcanics and minor intrusives(Cdb).

Felsic lavas within Western Volcano–Sedimentary sequence (Cdsvl).

Dominantly felsic to intermediate volcanic rocks, typically massive, feldspar–phyric. Central Volcanic Complex (Cdv).

Dominantly felsic volcanic, volcaniclastic and intrusive rocks, typically quartz–feldspar–phyric. Eastern Quartz–Phyric Sequence and correlates (Cdq).

Siliciclastic sandstone–siltstone–conglomerate units of metamorphic derivation. Includes Slicht Range Beds, Animal Creek Greywacke (Cdqg).

MT READ VOLCANICS

TYRERNEUVIAN – CAMBRIAN SERIES 2

Cs, Cl, Cc — Layered peridotite, serpentinite and associated rocks (Cs); tonalite and associated rocks (Cl); undifferentiated low–Ti tholeiitic and boninitic lavas (Cb). Structurally emplaced.

Cow, Cwt, Cwc — Mafic volcaniclastic sandstone–siltstone–mudstone–chert–minor carbonate sequences, with intercalated tholeiitic basalt flows. Considered diachronous. Luina Group and correlates (Cow). Tholeiitic basalt and picrite units (Cowb). Chert–rich sequences, including Barrington Chert (Cowc).

EDIACARAN

Pov, Pod, Pos, Pvu — Turbiditic volcaniclastic and mafic volcanic rocks (Crimson Creek Formation and correlates) (Pov).

Shallow marine quartz sandstone with minor dolomite, siltstone and chert beds (Success Creek Group and correlates) (Pds).

Angular unconformity.

KING ISLAND — GRASSY GROUP

Pyv — Tholeiitic basalt and picrite (Skipworth Subgroup) (Pyv).

Pys — Shale, siltstone, diamictite, minor carbonate and basaltic lava (Pys).

CRYOGENIAN

Pv, Pvq, Pvd, Pvs, Pvl, Pvp, Pvr — Shallow marine to perilidal, well–bedded, cross–bedded orthoquartzite, pink quartzite and siltstone (Jacob Quartzite) (Pv).

Shallow marine laminated grey siltstone, mudstone and dolomite (Irby Siltstone) (Pvl).

Shallow marine to perilidal, well–bedded, cross–bedded orthoquartzite and subordinate siltstone (Detention Subgroup) (Pvd).

Dominantly dark, laminated, commonly pyritic, marine siltstone and mudstone (Cowrie Siltstone and correlates) (Pvr).

Interbedded cross–bedded quartz sandstone and siliceous–carbonaceous siltstone, fining up to laminated chloritic siltstone (Balfour Subgroup) (Pvs).

Parallel–to cross–bedded quartz sandstone with rare quartz–pebble conglomerate and shale (Lagoon River Quartzite) (Pvr).

Interbedded to interlaminated siltstone and quartz siltstone–sandstone with erosional structures, grading and cross–lamination. (Pedder River Siltstone) (Pvp).

Unassigned quartzite sequences (Pvs).

ROCKY CAPE GROUP

NEOPROTEROZOIC

CRYOGENIAN

Pbb, Pyv, Pyq, Pyg, Pyl, Pyp, Pyr, Pyb, Pyd, Pyk, Pya — Tholeiitic basalt (Spinks Creek Volcanics, Bernafai Volcanics and correlates) (Pbb); with picrite (Skipworth Subgroup) (Pyv).

Subvolcanic andesitic intrusives (Grimes Intrusive Suite; on King Island) (Pyq).

Granitic rocks (on King Island) (Pg).

Tholeiitic dolerite dykes (Tayatea Dyke Swarm) (Pm).

Alkali basalt and dolerite (within Burnie and Oonah Formations; includes Cooee Dolerite) (Pob).

Amphibolite (Poa).

EDIACARAN

Pc, Pcc, Pcb, Pcs, Pcv, Pcu — Shallow marine to perilidal, well–bedded, cross–bedded orthoquartzite and subordinate siltstone (Detention Subgroup) (Pcd).

Dominantly dark, laminated, commonly pyritic, marine siltstone and mudstone (Cowrie Siltstone and correlates) (Pcr).

Interbedded cross–bedded quartz sandstone and siliceous–carbonaceous siltstone, fining up to laminated chloritic siltstone (Balfour Subgroup) (Pcs).

Parallel–to cross–bedded quartz sandstone with rare quartz–pebble conglomerate and shale (Lagoon River Quartzite) (Pcr).

Interbedded to interlaminated siltstone and quartz siltstone–sandstone with erosional structures, grading and cross–lamination. (Pedder River Siltstone) (Pcp).

Unassigned quartzite sequences (Pcs).

TOUGAH GROUP, AMBERED GROUP AND CORRELATES

Pcc — Chloritic schist, with minor phyllite, dolomite and rhodonite (Pcc); amphibolite (Poa).

Pcb — Phyllite with minor pelitic schist, foliated quartzite and dolomite, and rare conglomerate (Pcb).

Pct — Quartz mica schist, quartzite, phyllite and rare dolomite (Keith Schist and correlates) (Pct).

CRYOGENIAN

Pt, Ptg — Micaceous quartzite, schist, phyllite and minor amphibolite (Pt); Tyndarse Bay Formation, quartz siltstone and mudstone (Ptf) (Fraser Formation); garnetiferous metamorphic equivalents (Ptg).

ECTASIAN

Prs — Unassigned quartzite sequences (Prs).

Geological boundary.

Fault.

Wrench fault with relative displacement indicated.

Concealed fault.

(White line) — Limit of mapping of sub–unit within undifferentiated rock unit.

Axial trace of major antiform.

Axial trace of major synform.

Axial trace of overturned major antiform.

Axial surface of overturned major synform.

Form lines.

Erosional surface.

Terrestrial cavern fillings (Eugenana Beds) (Qc).

Angular unconformity attributed to major polyphase orogeny.

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.

SMITHTON – ROCKY CAPE REGION

TULLAH – DIAL RANGE – FOSSEY MOUNTAINS REGION

ARTHUR METAMORPHIC COMPLEX

KING ISLAND

TYENNAN AND SIMILAR REGIONS

The geological data for this map were compiled by J.Pemberton B.Sc.(Hons)M.Sc., C.R.Calver B.Sc.(Hons)Ph.D., K.D.Corbett B.Sc. (Hons)Ph.D., J.L.Everard B.Sc.(Hons), B.A.Goscombe B.Sc.(Hons)Ph.D., D.B.Seymour B.Sc.(Hons)Ph.D., M.J.Vicary B.Sc.(Hons), from Tasmanian Geological Survey Geological Atlas 1:63 360 and 1:50 000 series maps and other sources.

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GDA94 – MGA Zone 55.

Reference this map as:
CALVER, C.R.; CORBETT, K.D.; EVERARD, J.L.; GOSCOMBE. B.A.; PEMBERTON, J.; SEYMOUR, D.B.; VICARY, M.J. (comp.). 2011. Geology of Northwest Tasmania. Edition 2015.1. Digital Geological Atlas 1:250 000 Scale Series. Mineral Resources Tasmania.

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IGNEOUS ROCKS

CENOZOIC

PALEOCENE–NEOGENE

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

MESOZOIC

JURASSIC

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

PALEOZOIC

DEVONIAN – ORDOVICIAN

LOWER DEVONIAN – ORDOVICIAN

Dgy, Dgbl, Dgbh, Dgrh, Dgrl, Dg — Undifferentiated granitic rocks (Dg); undifferentiated alkali–feldspar granite/granite/adamellite, I–type (Dgy); S–type (Dgrh); dominantly adamellite/granite, I–type (Dgrl); S–type (Dgrh); dominantly adamellite/granite, I–type (Dgbl); S–type (Dgbh).

Dgn — Dominantly granodiorite/adamellite, I–type (Dgn).

ORDOVICIAN

COb — Tholeiitic basalt (Mt Tor area; upper Wilmot River) (COb).

COd — Tholeiitic dolerite (Black Bluff Range) (COd).

CAMBRIAN SERIES 3 – FURONGIAN

Cdtl — Felsic lavas within Tyndall Group (Cdtl).

Cdxvl — Felsic lavas within Western Volcano–Sedimentary Sequence (Cdxvl).

Cdb — Basaltic volcanics and minor intrusives (including Hellyer basalt) (Cdb).

Cds — Andesitic lavas, breccias and intrusive rocks (Cds).

Cdai — Major andesitic to dacitic intrusives, including Beulah Granite and Lobster Creek Intrusives (Cdai).

Cdv — Felsic to intermediate volcanic rocks (Central Volcanic Complex of Mt Read Volcanics) (Cdv).

Cdfp — Quartz feldspar porphyry (Cdfp).

Cgr — Granite, (includes Dove Granite) (Cgr).

Cdc — Dolerite (Mt Charter area; upper Leven River); diorite (Wilmot and Rhona areas) and basalt (Gog Range area) (Cdd).

Cg — Gabbroic rocks (Cg).

Cbo — Boninitic lavas (Cbo).

Cbt — Low–Ti tholeiitic lavas (Cbt).

Ct — Tonalite and associated rocks (Ct).

TYRERNEUVIAN – CAMBRIAN SERIES 2

Cs, Csd, Csp — Layered peridotite, serpentinite and associated rocks (Cs); dominantly serpentinised layered dunite and harzburgite ("LDH association") (Csd); dominantly layered pyroxenite and dunite ("LPD association") (Csp).

Cow — Tholeiitic basalt (within Luina Group and correlates; includes 'Walton Spilite') (Cowb).

Pbb, Pyv — Tholeiitic basalt (Spinks Creek Volcanics, Bernafai Volcanics and correlates) (Pbb); with picrite (Skipworth Subgroup) (Pyv).

Pyq — Subvolcanic andesitic intrusives (Grimes Intrusive Suite; on King Island) (Pyq).

Pg — Granitic rocks (on King Island) (Pg).

Pm — Tholeiitic dolerite dykes (Tayatea Dyke Swarm) (Pm).

Pob — Alkali basalt and dolerite (within Burnie and Oonah Formations; includes Cooee Dolerite) (Pob).

Poa — Amphibolite (Poa).

MT READ VOLCANICS (IN PART) AND ASSOCIATED INTRUSIVES

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

BASS STRAIT

Albatross Island
CAPE KERAUDREN
NORTH WEST CAPE
CAPE ROCHON
Coulomb Bay
THREE HUMMOCK ISLAND
HOPE CHANNEL
CAPE ADAMSON
Cuvier Bay
North Black Rock
Cuvier Pt
Black Pyramid
Wallaby Pt
HUNTER ISLAND
Cave Bay
Steep Island
South Black Rock
CAPE BUACHE
WALKER ISLAND
CHANNEL
Trefoil Island
WALKER
BOULLANGER BAY
Ransonnet Bay
Guyton Pt
CAPE GRIM
ROBBINS ISLAND
CAPE ELIE
ROBBINS PASSAGE
Half Moon Bay
Sisters
THE NUT
CIRCULAR HEAD
Shipwreck Pt
Big Bay
PERKINS BAY
PERKINS ISLAND
Bluff Pt
Studland Bay
Duck Bay
SAWYER BAY
SMITHTON
Forest
ROCKY CAPE
Anniversary Pt
Rocky Cape
Ann Bay
Christmas Hills
Green Pt
Marrawah
Irishtown
Boat Harbour Beach
Boat Harbour
TABLE CAPE
Redpa
WEST POINT
Lileah
Edith Creek
Myalla
WYNYARD
Mawson Bay
Bluff Hill Point
Trowutta
SOMERSET
Cooee Pt
BURNIE
Emu Bay
Hybridge
Sulphur Creek
Stowport
PENGUIN
Penguin Pt
Picnic Pt
ULVERSTONE
Sundown Pt
Nelson Bay
Yolla
Ridgley
Mersey Bluff
DEVONPORT
Sawyers
Spreyton
LATROBE
Richardson Pt
Hazard Bay
Sheffield
Kimberley
Ordnance Pt
Kenneth Bay
SANDY CAPE
Weegena
Mole Creek
Rupert Pt
Pieman Head
Hardwicke Bay
Conical Rocks Pt
Lake Mackintosh
DECEPTION PT
WOODSTONE MTN

WARNING: INKS ARE LIGHT SENSITIVE

THIS MAP IS EDITION 2015.1
BASED ON A STATEWIDE DATASET
Data correct & plotfile generated: 16-DEC-2015