Tasmanian Government

Department of State Growth

MINERAL RESOURCES TASMANIA

GEOLOGY OF NORTHWEST TASMANIA

SCALE 1:250000

0 5 10 15 20 25km

CENOZOIC

QUATERNARY – HOLOCENE

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

QUATERNARY – PLEISTOCENE

Q: Qgl, 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

TERTIARY – PALEOCENE–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.

CRETACEOUS – MIOCENE

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

JURASSIC – PERMIAN

P: Pu, Pl, Pf — 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 (Pt).

LOWER – UPPER PARMEENER SUPERGROUP

Angular unconformity.

MESOZOIC

PALEOZOIC

DEVONIAN – SILURIAN

SD: 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

O: Ob, COs, COc, COq, COmq — Dominantly shallow marine limestone with minor siltstone and sandstone (Gordon Group) (Ob). 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). Unconformity 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 (COq). Basalt lava (COb). Mainly siliciclastic conglomerate with sandstone interbeds, shallow marine to fluvial. Includes Middle Owen Conglomerate, Upper Owen Conglomerate, Dial Conglomerate, Roland Conglomerate (COc). Marine sandstone–siltstone–conglomerate sequences, typically lubiltic, 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; OWEN GROUP

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

CAMBRIAN – FURONGIAN

Cm — Polymict conglomerate, lithicwacke, siltstone and mudstone with minor carbonate beds (Scopus Formation) (Cm).

Inferred disconformity

CAMBRIAN – CAMBRIAN SERIES 3

Cds: Cdsu, Cdsv, Cds — 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 (Cdsu). Felsic lavas within Tyndall (Cdsv).

Cd: Cdv, Cdsv, Cdb, Cdsb, Cdsc — Andesitic lavas, breccias and intrusive rocks. Includes Que–Hellyer Volcanics, Beulah andesite (Cdv). 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 (Cdsv). Dominantly felsic to intermediate volcanic rocks, typically massive, feldspar-phyric. Central Volcanic Complex (Cds). 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 (Cdsq).

MT READ VOLCANICS

TYERRENDEUVIAN – CAMBRIAN SERIES 2

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

Cw: Cwb, Cwc, Cwv — Mafic volcaniclastic sandstone–siltstone–mudstone–chert–minor carbonate sequences, with interbedded tholeiitic basalt flows. Considered diachronous. Luina Group and correlates (Cwb). Tholeiitic basalt and picrite units (Cwb). Chert–rich sequences, including Barrington Chert (Cwc).

EDIACARAN – CRYOGENIAN

Pv: Pvc, Pvd, Pvb, Pvs, Pvu — Pale-weathering, thin bedded, laminated quartz siltstone with subordinate dolomite and tuffaceous shale, commonly silicified (Somers River Siltstone) (Pvr). Shallow marine dolomite and minor limestone (Smithton Dolomite and correlates) (Pvd). Turbiditic mudstone, siltstone, lithicwacke and diamictite with dominantly mafic detritus (Pvs); Tuffaceous Pelite (Pvu); Mafic Volcanics, Bernafai Volcanics and correlates) (Pvb). Shallow marine dolomite, chert, shale and diamictite (Black River Dolomite, Savage Dolomite and correlates) (Pvc). Basal siliceous and carbonaceous sandstone (Forest Conglomerate and Quartzite, Donatagon Formation and correlates) (Pvc).

Low-angle unconformity or inferred disconformity.

TOGARI GROUP; ARBERDS GROUP AND CORRELATES

ARTHUR METAMORPHIC COMPLEX

Ppc — Chloritic schist, with minor phyllite, dolomite and rhodonite (Ppc); amphibolite (Ppa).

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

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

KING ISLAND

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

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

GRASSY GROUP

Pdc — Turbiditic volcaniclastic and mafic volcanic rocks (Crimson Creek Formation and correlates) (Pdc).

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

Angular unconformity.

Pu: Puq, Pud, Pub — Quartzwacke turbidite sequences with minor dolomite (Pu); quartzwacke of high-grade metamorphic provenance (Puq). Dolomitic mudstone, siltstone and sandstone (Pud). (Burnie and Danish Formations and correlates). Alkali basalt and dolerite (within Burnie and Danish Formations, includes Cooee Dolerite) (Pub).

NEOPROTEROZOIC

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

MESOPROTEROZOIC

P: Pr, Prd, Prc, Prs, Pri, Pri, Prp, Prs — Shallow marine to perilidal, well-bedded, cross-bedded orthoquartzite, pale quartzite and siltstone (Jacob Quartzite) (Pr). Shallow marine laminated grey siltstone, mudstone and dolomite (Irby Siltstone) (Pri). Shallow marine to perilidal, well-bedded, cross-bedded orthoquartzite and subordinate siltstone (Detention Subgroup) (Prd). Dominantly dark, laminated, commonly pyritic, marine siltstone and mudstone (Cowrie Siltstone and correlates) (Prc). Interbedded cross-bedded quartz sandstone and siliceous–carbonaceous siltstone, fining up to laminated chloritic siltstone (Balfour Subgroup) (Prs). Parallel–to cross–bedded quartz sandstone with rare quartz–pebble conglomerate and shale (Lagoon River Quartzite) (Pri). Interbedded to interlaminated siltstone and quartz siltstone–sandstone with erosional structures, grading and cross–lamination (Pedder River Siltstone) (Prp). Unassigned quartzite sequences (Prs).

ROCKY CAPE GROUP

TYENNAN AND SIMILAR REGIONS

P: Prs, Pt: Ptp, Ptpg, Ptq — Undifferentiated metasedimentary sequences, with greenschist facies metamorphism (Pt). Dominantly quartzite sequences (Prs). Dominantly pelitic sequences, mainly phyllite (Ptp). Garnetiferous pelitic schist (Ptpg). Dominantly schistose conglomerate (Goat Island Conglomerate and correlates) (Ptq).

ECTASIAN

SMITHTON – ROCKY CAPE REGION

TULLAH – DIAL RANGE – FOSSEY MOUNTAINS REGION

IGNEOUS ROCKS

JURASSIC – PALEOCENE

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

JURASSIC

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

DEVONIAN – ORDOVICIAN

LOWER DEVONIAN – ORDOVICIAN

Dgp: Dgpf, Dgpm, Dgpl, Dg — Undifferentiated granitic rocks (Dg); undifferentiated alkali–feldspar granite/granite/adamellite, I–type (Dgp); S–type granite, adamellite, granite, I–type (Dgpr); S–type (Dgpf); dominantly adamellite/granite, I–type (Dgpm); S–type (Dgpa).

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

ORDOVICIAN

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

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

CAMBRIAN

CAMBRIAN SERIES 3 – FURONGIAN

Cdsl: Cdsl — Felsic lavas within Tyndall Group (Cdsl).

Cdsu: Cdsu — Felsic lavas within Western Volcano–Sedimentary Sequence (Cdsv).

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

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

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

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

Cdfp — Quartz feldspar porphyry (Cdfp).

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

Cdg — 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: Cbt, Cbl — Low–Ti tholeiitic lavas (Cbt).

Ct — Tonalite and associated rocks (Ct).

TYERRENDEUVIAN – 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).

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

Cwc: Cwb, Cwv — Tholeiitic basalt (Spinks Creek Volcanics, Bernafai Volcanics and correlates) (Pvb); with picrite (Skipworth Subgroup) (Pyv).

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

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

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

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

Ppo — Amphibolite (Ppo).

MT READ VOLCANICS (IN PART) AND ASSOCIATED INTRUSIVES

NEOPROTEROZOIC

CRYOGENIAN – EDIACARAN

The geological data for this map were compiled by C.R.Calver B.Sc.(Hons)Ph.D, K.D.Corbett B.Sc. (Hons)Ph.D., G.V.Cumming B.Sc.(Hons), J.L.Everard B.Sc.(Hons), B.A.Goscombe B.Sc.(Hons)Ph.D., J.Pemberton B.Sc.(Hons) M.Sc., 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.

Base data from the LIST, Copyright State of Tasmania.

Map produced by Spatial Information Services, Mineral Resources Tasmania using G.I.S. software.

GDA94 – MGA Zone 55.

Reference this map as:
CALVER, C.R.; CORBETT, K.D.; CUMMING, G.V.; EVERARD, J.L.; GOSCOMBE, B.A.; PEMBERTON, J.; SEYMOUR, D.B.; VICARY, M.J.; (comp.). 2011.
Geology of Northwest Tasmania. Edition 2016.1.
Digital Geological Atlas 1:250 000 Scale Series.
Mineral Resources Tasmania.

While every care has been taken in the preparation of this data, no warranty is given as to the correctness of the information and no liability is accepted for any statement or opinion or for any error or omission. No reader should act or fail to act on the basis of any material contained herein. Readers should consult professional advisers. As a result the Crown in Right of the State of Tasmania and its employees, contractors and agents expressly disclaim all and any liability (including all liability from or attributable to the negligence of the State or its employees or agents) to any person whatsoever in respect of anything done or omitted to be done by any such person in reliance whether in whole or in part upon any of the material in this data.

Crown copyright reserved.

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).

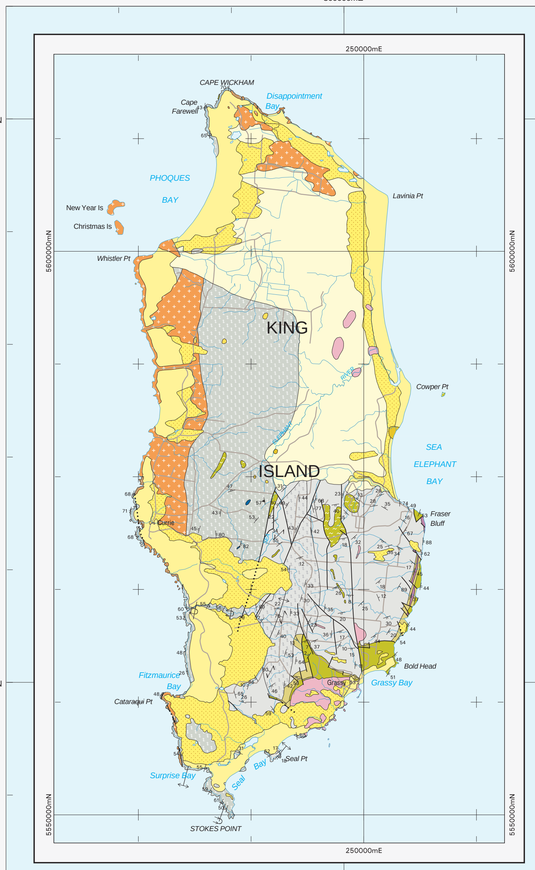
Geological Survey mapping (1:100,000 scale)

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 2016.1
BASED ON A STATEWIDE DATASET
Data correct & plotfile generated: 19-APR-2016