A1

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).

PLEISTOCENE

- Q / Qp: Qpl, Qpg, Qps, Qpl — Glacial, periglacial and fluvioglacial sediments including till and interglacial deposits (Qp); talus, vegetated and active (Qpt); glacial and glacigene deposits (Qpg); coastal sand and gravel (Qps); limestone (Qpl).

Erosional surface

PALEOGENE–NEOGENE

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

Erosional surface.

TRIASSIC

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

PERMIAN

- P: Pu, Pl — Upper glaciomarine sequences of pebbly mudstone, pebbly sandstone and limestone (Pu).

CARBONIFEROUS

- Pl — Freshwater and paralic sandstone and mudstone with some coal measures (Pl).
- Pt — Lower glaciomarine sequences of mudstone, pebbly mudstone, pebbly sandstone, minor limestone and tasmanite oil shale (Pt); basal tillite (Pt).

LOWER — UPPER — PARMEENER SUPERGROUP

Angular unconformity.

PALEOZOIC — ORDOVICIAN — FURONGIAN

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

Inferred disconformity

CAMBRIAN — CAMBRIAN SERIES 3

SMITHTON – ROCKY CAPE REGION

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.

Dc — Terrestrial cavern fillings (Eugenana Beds) (Dc).

Angular unconformity attributed to major polyphase orogeny.

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

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

Os — 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.

CO: COs, COb, COc, COms — 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 non-marine, pebble to boulder grade. Includes Middle Owen Conglomerate, Dial Conglomerate, Roland Conglomerate (COc).
Marine sandstone–siltstone–conglomerate sequences, typically tubiditic, siliciclastic to polymict. Furongian fossils in places. Includes Newton Creek Sandstone, Middle Owen Sandstone, upper Dundas Group, much of 'Rosebery Group' (COms).

OWEN GROUP — GORDON GROUP — ELDON GROUP — WURAWINA SUPERGROUP

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

TULLAH – DIAL RANGE – FOSSEY MOUNTAINS REGION

Cdt: Cdtt, Cdta — Dominantly sedimentary sequences with minor volcanic and volcaniclastic units (Cds).
Upper sequence of felsic to intermediate volcaniclastic and volcanic rocks, with sedimentary units, of Cambrian Series 3 age, Tyndall Group and correlates (Cdt). Felsic lavas within Tyndall (Cdtt).

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

Cdv: Cdsvl, Cdsv, Cdsv, Cds, Cdsq — Dominantly volcano-sedimentary sequences with some felsic to intermediate volcanic rocks; Cambrian Series 3 fossils in places. Western Volcano–Sedimentary sequences, Mt Charter Group, Gag 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 Sticht Range Beds, Animal Creek Greywacke (Cdsq).

MT READ VOLCANICS

Layered peridotite, serpentinite and associated rocks (Cs);

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.

IGNEOUS ROCKS

MESOZOIC CENOZOIC — PALEOGENE–NEOGENE

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

JURASSIC

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

DEVONIAN–CARBONIFEROUS — LOWER DEVONIAN–MISSISSIPPIAN

- Dg: Dgo, Dgsl, Dgsts, Dgsa, Dgsas, Dgas — Undifferentiated granitic rocks (Dg); undifferentiated alkali–feldspar granite/granite/adamellite, I–type (Dgo); S–type (Dgas); dominantly alkali–feldspar granite, I–type (Dgsl); S–type (Dgsts); dominantly adamellite/granite, I–type (Dgsa); S–type (Dgsas).
- 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

- Cdtt — Felsic lavas within Tyndall Group (Cdtt).
- Cdsvl — Felsic lavas within Western Volcano–Sedimentary Sequence (Cdsvl).
- Cdb — Basaltic volcanics and minor intrusives (including Hellyer basalt) (Cdb).

FURONGIAN

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.

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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 2018.1.
Digital Geological Atlas 1:250 000 Scale Series.
Mineral Resources Tasmania.

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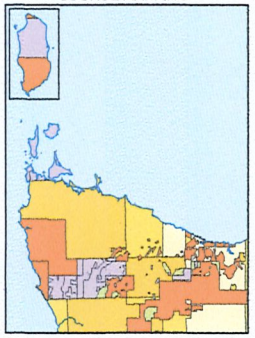
SOURCE MAPPING



- 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.

560

555

PALEOZOIC

ORDOVICIAN

FURONGIAN

CAMBRIAN

CAMBRIAN SERIES 3

?TERRENEUVIAN - CAMBRIAN SERIES 2

NEOPROTEROZOIC

EDIACARAN

CRYOGENIAN

MESOPROTEROZOIC

ECTASIAN

SMITHTON – ROCKY CAPE REGION

Cm — Polymict conglomerate, lithicwacke, siltstone and mudstone with rare marine fossils (Scopus Formation) (Cm).

Inferred discontinuity

Psr — Pale-weathering, thin bedded, laminated quartz siltstone with subordinate interbedded fissile shale, commonly silicified (Salmon River Siltstone) (Psr).

Psd — Shallow marine dolomite and minor limestone (Smithton Dolomite and correlates) (Psd).

Psv, Psb — Turbiditic mudstone, siltstone, lithicwacke and diamictite with dominantly mafic detritus (Psv); tholeiitic basalt (Spinks Creek Volcanics, Bernafai Volcanics and correlates) (Psb).

Psa, Psc — Shallow marine dolomite, chert, shale and diamictite (Black River Dolomite, Savage Dolomite and correlates) (Psa); basal siliceous conglomerate and sandstone (Forest Conglomerate and Quartzite, Donaldson Formation and correlates) (Psc).

Low-angle unconformity or inferred discontinuity.

TOGARI GROUP, AHRBERG GROUP AND CORRELATES

ARTHUR METAMORPHIC COMPLEX

Pac, Pae — Chloritic schist, with minor phyllite, dolomite and magnesite (Pac); amphibolite (Pae).

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

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

Pr — Shallow marine to peritidal, well-bedded, cross-bedded orthoquartzite, platy quartzite and siltstone (Jacob Quartzite) (Prj).

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

Prd — Shallow marine to peritidal, well-bedded, cross-bedded orthoquartzite and subordinate siltstone (Detention Subgroup) (Prd).

Prc — Dominantly dark, laminated, commonly pyritic, marine siltstone and mudstone (Cowrie Siltstone and similar sequences) (Prc).

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

Prl — Parallel- to cross-bedded quartz sandstone with rare quartz-pebble conglomerate and shale (Lagoon River Quartzite) (Prl).

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

Prs — Unassigned quartzite sequences (Prs).

ROCKY CAPE GROUP

Guyton Pt

CO, Os — Undifferentiated or poorly constrained conglomerate-sandstone sequences of Furongian to Ordovician age (CO).

COs — 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.

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

COc — Mainly siliciclastic conglomerate with sandstone interbeds, shallow marine to non-marine, pebble to boulder grade, includes Middle Owen Conglomerate, Dial Conglomerate, Roland Conglomerate (COc).

COms — Marine sandstone-siltstone-conglomerate sequences, typically tubiditic, siliciclastic to polymict, Furongian fossils in places, includes Newton Creek Sandstone, Middle Owen Sandstone, upper Dundas Group, much of 'Rosebery Group' (COms).

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

OWEN GROUP, GORDON GR, WURAWINA SUP

TULLAH – DIAL RANGE – FOSSEY MOUNTAINS REGION

Cdt, Cdtl — Dominantly sedimentary sequences with minor volcanic and volcaniclastic units (Cds).

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

Cdb — Andesitic lavas, breccias and intrusive rocks, includes, Que-Hellyer Volcanics, Beulah andesite (Cda).

Cdsvl — 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).

Cdsv — Basaltic volcanics and minor intrusives(Cdb).

Cds — Felsic lavas within Western Volcano-Sedimentary sequence (Cdsvl).

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

Cdsq — 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 Stichi Range Beds, Animal Creek Greywacke (Cdsa).

MT READ VOLCANICS

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

Ccwq, Ccw, Ccwb, Ccwc — Mafic volcaniclastic sandstone-siltstone-mudstone-chert-minor carbonate sequences, with intercalated tholeiitic basalt flows. Considered allochthonous. Luina Group and correlates (Ccw). Dominantly micaceous quartzose lithicwacke, including Crescent Spur Sandstone (Ccwq). Tholeiitic basalt and picrite units (Ccwb). Chert-rich sequences, including Barrington Chert (Ccwc).

KING ISLAND

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

Pds — Shallow marine quartz sandstone and siltstone with carbonate and chert beds (Success Creek Group and correlates) (Pds).

Angular unconformity.

Pq, Pad, Pab — Quartzwacke turbidite sequences with minor dolomite (Pq); quartzwacke of high-grade metamorphic provenance (Paq).

Dolomitic mudstone, siltstone and sandstone (Pad), (Burnie and Oonah Formations and correlates).

Alkali basalt and dolerite (within Burnie and Oonah Formations, includes Cooee Dolerite) (Pab).

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

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

GRASSY GROUP

TYENNAN AND SIMILAR REGIONS

Pt, Pts, Ptp, Ptpq, Ptb — Undifferentiated metasedimentary sequences, with greenschist facies metamorphism (Pt). Dominantly quartzite sequences (Pts).

Dominantly pelitic sequences, mainly phyllite (Ptp).

Garnetiferous pelitic schist (Ptpq).

Dominantly schistose conglomerate (Goat Island Conglomerate and correlates) (Ptb).

Pb, Pf, Pfg — Micaceous quartzite, schist, phyllite and minor amphibolite (Pb) (Suprise Bay Formation); quartz siltsione and mudstone (Pf) (Fraser Formation); garnetiferous metamorphic equivalents (Pfg).

PALEOZOIC

NEOPROTEROZOIC

MESOZOIC CENOZOIC

PALEOGENE NEOGENE

JURASSIC

DEVONIAN-CARBONIFEROUS

LOWER DEVONIAN - MISSISSIPPIAN

ORDOVICIAN

CAMBRIAN

CAMBRIAN SERIES 3 - FURONGIAN

?TERREREUVIAN - CAMBRIAN SERIES 2

CRYOGENIAN EDIACARAN

IGNEOUS ROCKS

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

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

Dg, Dgaf, Dgafs, Dgaa, Dgaas, Dgas — Undifferentiated granitic rocks (Dg); undifferentiated alkali-feldspar granite/granite/adamellite, I-type (Dga); S-type (Dgas); dominantly alkali-feldspar granite, I-type (Dgaf); S-type (Dgafs); dominantly adamellite/granite, I-type (Dgaa); S-type (Dgaas).

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

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

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

Cdtl — Felsic lavas within Tyndall Group (Cdtl).

Cdsvl — Felsic lavas within Western Volcano-Sedimentary Sequence (Cdsvl).

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

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

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

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

Cqfp — Quartz feldspar porphyry (Cqfp).

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

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

MT READ VOLCANICS (IN PART) AND ASSOCIATED INTRUSIVES

Cg — Gabbroic rocks (Cg).

Cb, Cbt, Cbtv, Cbp, Cba — Low-titanium tholeiitic lavas (Cbt); derived coarse-grained volcaniclastics (Cbtv).

Picritic lava and breccia (Cbp).

Boninitic lavas (Cba).

Ct — Tonalite and associated rocks (Ct).

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

Ccwb — Tholeiitic basalt (within Luina Group and correlates; includes Motton Spilite) (Ccwb).

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

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

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

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

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

Paa — Amphibolite (Paa).

Survey mapping (1:10,000 – 1:50,000 scale).

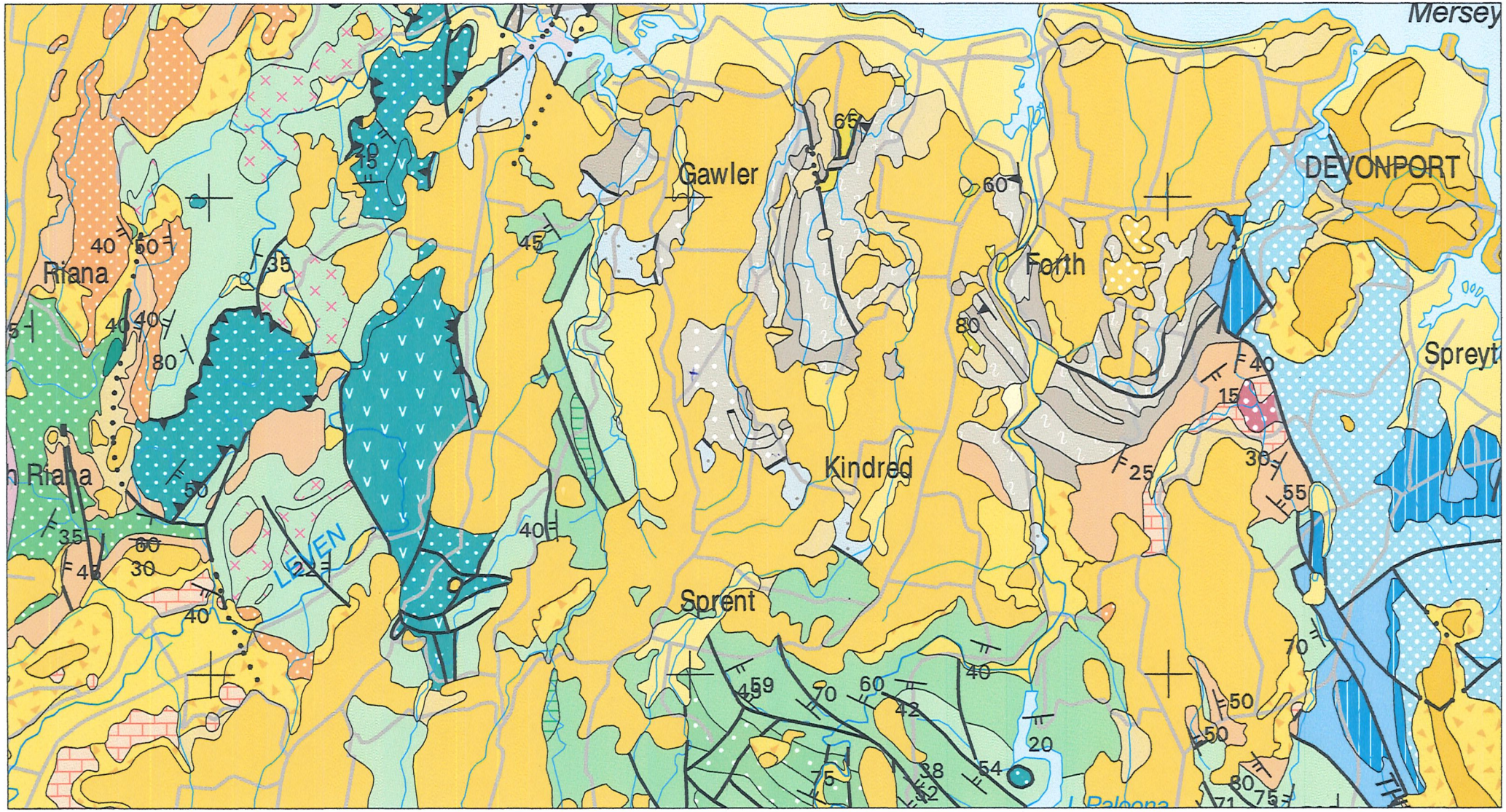
- Geological Survey mapping (1:63,360 scale) after 1965.
- Geological Survey mapping (1:63,360 scale) before 1965.
- Other mapping (1:63,360 or more detailed scale).
- Geological Survey mapping (1:100,000 scale)
- Reconnaissance scale mapping, and/or interpretation based on air photo and/or geophysical 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


Mersey
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Spreyt
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Sprent
LEVEN