Tasmanian Government

Department of State Growth

MINERAL RESOURCES TASMANIA

GEOLOGY OF NORTHWEST TASMANIA

SCALE 1:250000

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300000mE 350000mE 400000mE 450000mE

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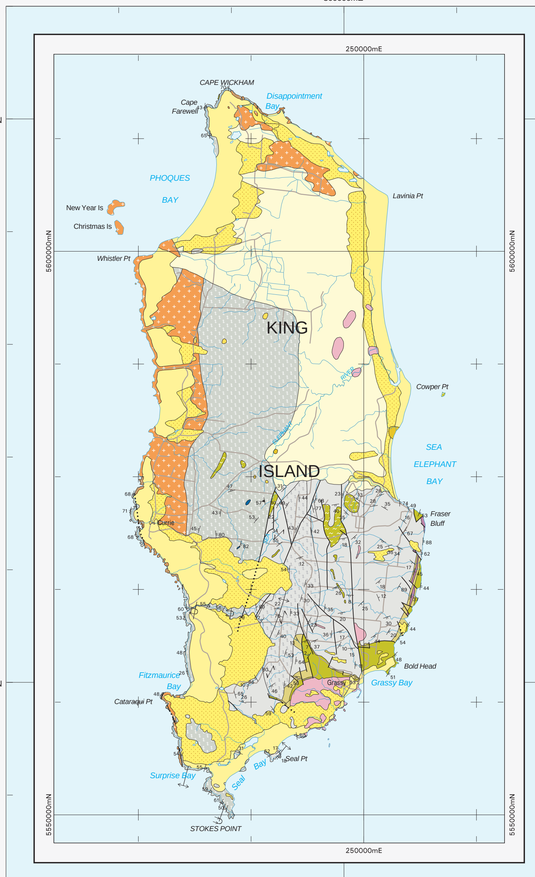

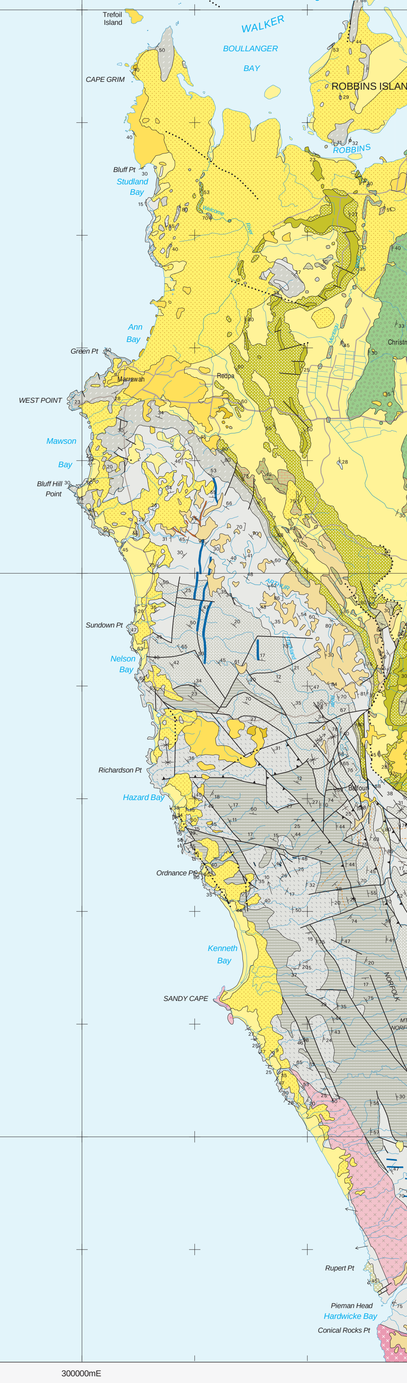

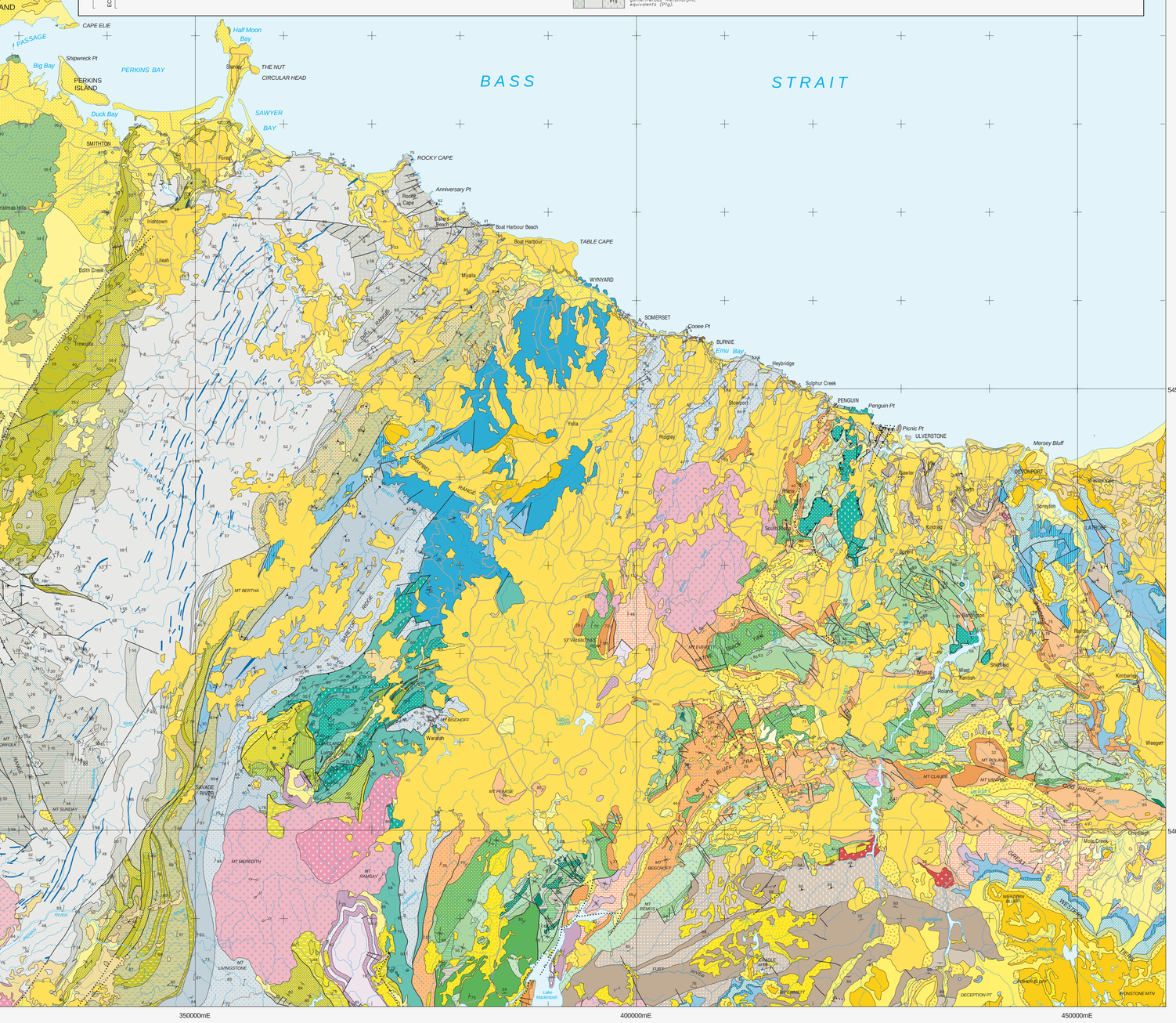

WARNING: INKS ARE LIGHT SENSITIVE

CENOZOIC

QUATERNARY

HOLOCENE

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

PLEISTOCENE (Q)

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

Erosional surface

PALEOGENE – NEOGENE

- Tm — 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-SSIC

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

PERM-IAN

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

CARBON-IFEROUS

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

LOWER – UPPER PARMENIER SUPERGROUP

Angular unconformity.

PALEOZOIC

DEVONIAN

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

ELDON GROUP

SILURIAN

- Ol — Dominantly shallow marine limestone with minor siltstone and sandstone (Gordon Group) (Ol).
- 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). Unconformly on older rocks in places.
- COa — Shallow marine sandstone, typically pink, cross-bedded to thin-bedded, with some siltstone and minor conglomerate. Includes Upper Owen Sandstone (COa). Basalt lava (COb).
- COq — Mainly siliciclastic conglomerate with sandstone interbeds, shallow marine to fluvial. Includes Upper Owen Conglomerate, Middle Owen Conglomerate, Dial Conglomerate, Roland Conglomerate (COq).
- COmq — 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 Rossberry Group (COmq).

GORDON GROUP; OWEN GROUP; WARRAWANA SUPERGROUP

ORDOVICIAN

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 SERIES 3

- Cds — Dominantly sedimentary sequences with minor volcanic and volcaniclastic units (Cds).
- Cdsvt — Upper, sedimentary to intermediate volcaniclastic and volcanic units, and sedimentary units, of Cambrian Series 3 age. Tyndall Group and correlates (Cdt). Felsic lavas within Tyndall (Cdtl).
- Cdv — Andesitic lavas, breccias and intrusive rocks. Includes Que–Hellyer Volcanics, Beulah andesite (Cda).
- Cdsv — 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).
- Cdb — Basaltic volcanics and minor intrusives(Cdb).
- Cdsvl — Felsic lavas within Western Volcano–Sedimentary sequence (Cdsvl).
- Cdq — Dominantly felsic to intermediate volcanic rocks, typically massive, feldspar-phyric. Central Volcanic Complex (Cdq).
- Cdqq — Dominantly felsic volcanic, volcaniclastic and intrusive rocks, typically quartz–feldspar–phyric. Eastern Quartz–Phyric Sequence and correlates (Cdq).
- Cdsq — Siliciclastic sandstone–siltstone–conglomerate units of metamorphic derivation. Includes Slicht Range Beds, Animal Creek Greywacke (Cdsq).

MT READ VOLCANICS

TYRENNEIAN – CAMBRIAN SERIES 2

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

NEOPROTEROZOIC

CRYOGENIAN

- Pu — Pale–weathering, thin bedded, laminated quartz siltstone with minor dolomite and dolomitic shale, commonly silicified (Sprent River Siltstone) (Pur).
- Pmd — Shallow marine dolomite and minor limestone (Smithton Dolomite and correlates) (Pmd).
- Pu — Turbiditic mudstone, siltstone, lithicwacke and diamictite with dominantly mafic detritus (Pzu); Pencil Pine Group, Mt Read Volcanics, Bernafai Volcanics and correlates) (Pub).
- Pmd — Shallow marine dolomite, chert, shale and diamictite (Black River Dolomite, Savage Dolomite and correlates) (Pmd). Basal siliceous and carbonaceous sandstone (Forest Conglomerate and Quartzite, Donatayan Formation and correlates) (Pac).

Low–angle unconformity or inferred disconformity.

TOGARI GROUP, ARBERDS GROUP AND CORRELATES

- Poc — Chloritic schist, with minor phyllite, dolomite and magnetite (Poc); amphibolite (Pop).
- Pop — Phyllite with minor pelitic schist, foliated quartzite and dolomite, and rare conglomerate (Pop).
- Pot — Quartz mica schist, quartzite, phyllite and rare dolomite (Keith Schist and correlates) (Pot).

ARTHUR METAMORPHIC COMPLEX

- Pu — Turbiditic volcaniclastic and mafic volcanic rocks (Crimson Creek Formation and correlates) (Pzu).
- Pds — Shallow marine quartz sandstone and minor dolomite, siltstone and chert beds (Success Creek Group and correlates) (Pds).

Angular unconformity.

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

KING ISLAND

- Pyv — Tholeiitic basalt and picrite (Skipworth Subgroup) (Pyv).
- Pys — Shale, siltstone, diamictite, minor carbonate and basaltic lava (Pys).

GRASSY GROUP

EDIACARAN

- Pu — Shallow marine to peritidal, well–bedded, cross–bedded orthoquartzite, pale quartzite and siltstone (Jacob Quartzite) (Pr1).
- Pr1 — Shallow marine laminated grey siltstone, mudstone and dolomite (Hly Siltstone) (Pr1).
- 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 correlates) (Prc).
- Prs — Interbedded cross–bedded quartz sandstone and siliceous–carbonaceous siltstone, fining up to laminated chloritic siltstone (Balfour Subgroup) (Prs).
- Pr1 — Parallel–to cross–bedded quartz sandstone with rare quartz–pebble conglomerate and shale (Lagoon River Quartzite) (Pr1).
- Pr2 — Interbedded to interlaminated siltstone and quartz siltstone–sandstone with erosional structures, grading and cross–lamination (Pedder River Siltstone) (Pr2).

Unassigned quartzite sequences (Prs).

ROCKY CAPE GROUP

ECTASIAN

- Pt — Micaceous quartzite, schist, phyllite and minor amphibolite (Pt); (Surprise Bay Formation), quartz siltstone and mudstone (Pf) (Fraser Formation); garnetiferous metamorphic equivalents (Pfg).

TULLAH – DIAL RANGE – FOSSEY MOUNTAINS REGION

TYENNAN AND SIMILAR REGIONS

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

IGNEOUS ROCKS

CENOZOIC

PALEOCENE – NEOGENE

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

MESOZOIC

JURA-SSIC

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

PALEOZOIC

DEVONIAN – ORDOVICIAN

LOWER DEVONIAN – ORDOVICIAN

- Dsp — Undifferentiated granitic rocks (Dg); undifferentiated alkali–feldspar granite/granite/adamellite, I–type (Dgs); S–type (Dgsp); adamellite/granite, I–type (Dgar); S–type (Dgsa); adamellite/granite, I–type (Dgan); S–type (Dgsan).
- Dgn — Dominantly granodiorite/adamellite, I–type (Dgn).
- Cdt — Tholeiitic basalt (Mt Tor area; upper Wilmot River) (Cdb).
- CCd — Tholeiitic dolerite (Black Bluff Range) (CCd).

ORDOVICIAN

SERIES 3 – FURONGIAN

- 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).
- Cds — Andesitic lavas, breccias and intrusive rocks (Cds).
- 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).
- Cdfp — Quartz feldspar porphyry (Cdfp).

MT READ VOLCANICS (IN PART) AND ASSOCIATED INTRUSIVES

CAMBRIAN

- Cgr — Granite, (includes Dove Granite) (Cgr).
- Cdi — Dolerite (Mt Charter area; upper Leven River); diorite (Wilmot and Rhona areas) and basalt (Gog Range area) (Cdd).
- Cg — Gabbroic rocks (Cg).

SERIES 2 – CAMBRIAN

- Ct — Low–titanium tholeiitic lavas (Cbt); derived coarse–grained volcaniclastics (Cbtv).
- Cbp — Picritic lava and breccia (Cbp).
- Cbb — Boninitic lavas (Cbb).
- Ct — Tonalite and associated rocks (Ct).
- Ccu — Layered peridotite, serpentinite and associated rocks (Cs); dominantly dunite, harzburgite ("LZM association") (Ccu); dominantly layered pyroxenite and dunite ("LPD association") (Csp).
- Csp
- Pzb — Tholeiitic basalt (within Luina Group and correlates; includes 'Motton Spilite') (Ccwb).
- Pzv — Tholeiitic basalt (Spinks Creek Volcanics, Bernafai Volcanics and correlates) (Pzb); with picrite (Skipworth Subgroup) (Pyv).
- Pys — Subvolcanic andesitic intrusives (Grimes Intrusive Suite; on King Island) (Pys).
- Pg — Granitic rocks (on King Island) (Pg).
- Pzt — Tholeiitic dolerite dykes (Tayatea Dyke Swarm) (Dm).
- Pzb — Alkali basalt and diperite (within Burnie and Oonah Formations; includes Cooee Dolerite) (Pzb).
- Pzo — Amphibolite (Pzo).

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.

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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 2017.1.
Digital Geological Atlas 1:250 000 Scale Series.
Mineral Resources Tasmania.

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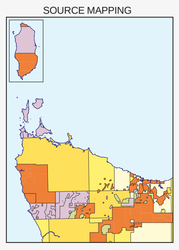

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- Geological Survey mapping (1:50,000 scale) and unpublished compilation Geological Survey mapping (1:10,000 –1:50,000 scale).
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SOURCES
Source information for this map is available as an additional sheet.

LOCATION DIAGRAM

THIS MAP IS EDITION 2017.1
BASED ON A STATEWIDE DATASET
Data correct & plotfile generated: 11-OCT-2017