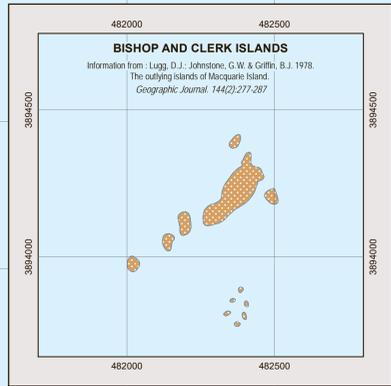


# GEOLOGY OF MACQUARIE ISLAND - SHEET 7



Geology by B.D.Goscombe, BSc (Hons), PhD and J.L.Everard, BSc (Hons), December 1994 - May 1995; September 1995 - January 1996. Project initiated and supervised by A.V. Brown, BSc (Hons), PhD, Director, Mineral Resources Tasmania, with funds provided by the Australian Antarctic Foundation, and logistical support provided by the Australian Antarctic Division.

Base map drawn from several sources: The Spot multispectral satellite mosaic produced by the Australian Centre for Remote Sensing (ACRES) 1994. Division of National Mapping Macquarie Island 1:50,000 topographic map (1971) warped to conform with the satellite mosaic along coastline and lakes. Incomplete aerial photography flown in 1976 (mainly in the north of the island). GPS positions and field observations.

Map produced by the Data Management Group, Mineral Resources Tasmania, using GIS software. Original map produced March 1998. Absolute position with respect to horizontal datum and topographic features is approximate. 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 trade should act or be taken on the basis of any material contained herein. Readers should consult professional advisers. Use of the Crown Copyright logo of the State of Tasmania and its employees, contractors and agents operating equipment and its employees, contractors and agents operating equipment in respect of anything done or omitted to be done by any such person in reliance on the Crown Copyright logo is not intended to be done by any such person in reliance on the Crown Copyright logo.

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- ALLUVIAL, LACUSTRINE AND SWAMP DEPOSITS**
- Aluvium, including deposits at the margin of lakes.
  - Colluvium of wash slopes.
- SLOPE DEPOSITS**
- Scree slopes.
  - Alluvial fans, with slopes of less than 22 degrees.
  - Deposits of large (2-20m) boulders along coasts, typically in bays on west coast.
- BEACH AND AEOLIAN DEPOSITS**
- Pebbly to cobbly beach deposits.
  - Aeolian silt and sand deposits, often with gravel lag; approximate thickness of deposit in metres indicated where known.
  - Pebble-beach deposits of rounded and smoothed cobbles and pebbles, less commonly with coarse sand.
  - Scattered pebble-beach cobbles and pebbles (shown as overprint on underlying units).

- SEDIMENTARY ROCKS**
- Mudstone and siltstone, usually laminated and red.
  - Sandstone and pebbly sandstone with muddy to silty matrix; usually grey, greenish-grey or red.
  - Conglomerates, usually clay supported, consisting of sub-rounded to sub-angular cobble- to boulder-sized clasts of basalt and dolerite, in a mudstone to sandstone matrix.
  - Sedimentary rock matrix between pillows in bays or blocks of breccia indicated:
    - ooze - pale grey to green siliceous ooze.
    - lime - clear to pale pink limestone.
    - mud - red to grey mudstone.
- VOLCANICLASTIC ROCKS**
- Hyaloclastite breccia consisting of angular to sub-rounded blocks of usually aphyric basalt in a glass matrix. Plagioclase-phyric blocks indicated (sp); % proportion of glass indicated (G%).
  - Volcaniclastic breccia, matrix supported, with blocks of usually aphyric basalt, plagioclase-phyric basalt blocks indicated (sp).
  - Volcaniclastic breccia, clear-supported, with blocks of usually aphyric basalt, plagioclase-phyric basalt blocks indicated (sp).
  - Breccia containing isolated pillows or lenticular zones of pillows indicated (sp).

- LAVAS**
- Pillow basalt, aphyric to very sparsely phytic (<5% plagioclase phenocrysts), usually amygdaloidal.
  - Pillow basalt, sparsely to moderately phytic (5-30% plagioclase phenocrysts), usually amygdaloidal.
  - Pillow basalt, densely to very densely phytic (>30% plagioclase phenocrysts), usually amygdaloidal.
  - Hyaloclastite (glass and basalt fragments) matrix of pillows indicated: % proportion of glass (G%); with hyaloclastite matrix containing plagioclase phenocrysts (20%+).
  - Disaggregated pillows indicated by overprint.
  - Tabular basalt flows, medium- to fine-grained, usually aphyric; rarely sparsely plagioclase-phyric (sp) or densely plagioclase-phyric (sp). Rarely with zones of pillows (pl).
  - Tabular basalt flows, medium- to coarse-grained with mesocrystically visible plagioclase laths, usually aphyric; rarely sparsely plagioclase-phyric (sp). Rarely with zones of pillows (pl). Autobrecciation indicated (brecc).

- Geological boundary - position approximate.
- Geological boundary - position inferred.
- Fault - position approximate.
- Fault - inferred.
- Dolerite dykes, trace or trend.
- Track.
- Topographic high point.

- Bedding in sedimentary rock - right way up; overturned.
- Bedding defined by orientation of massive tabular lava units.
- Bedding defined by lithological layering of distinct rock units.
- "Bedding" defined by plane of pronounced flattening of pillows.
- Strike and dip of dyke or vein; vertical.
- Cleavage, fracture-cleavage or fractures - dipping; vertical.
- Strong penetrative cleavage with possible grain-realignment.
- Strike and dip of outcrop scale fault.
- Trend and plunge of slickenside, within indicated fault plane.
- Sense of movement on fault or ductile shear zone - dextral; sinistral; (none) for scarp on the plateau; the most recent, but not necessarily the most important, sense of movement is indicated.

