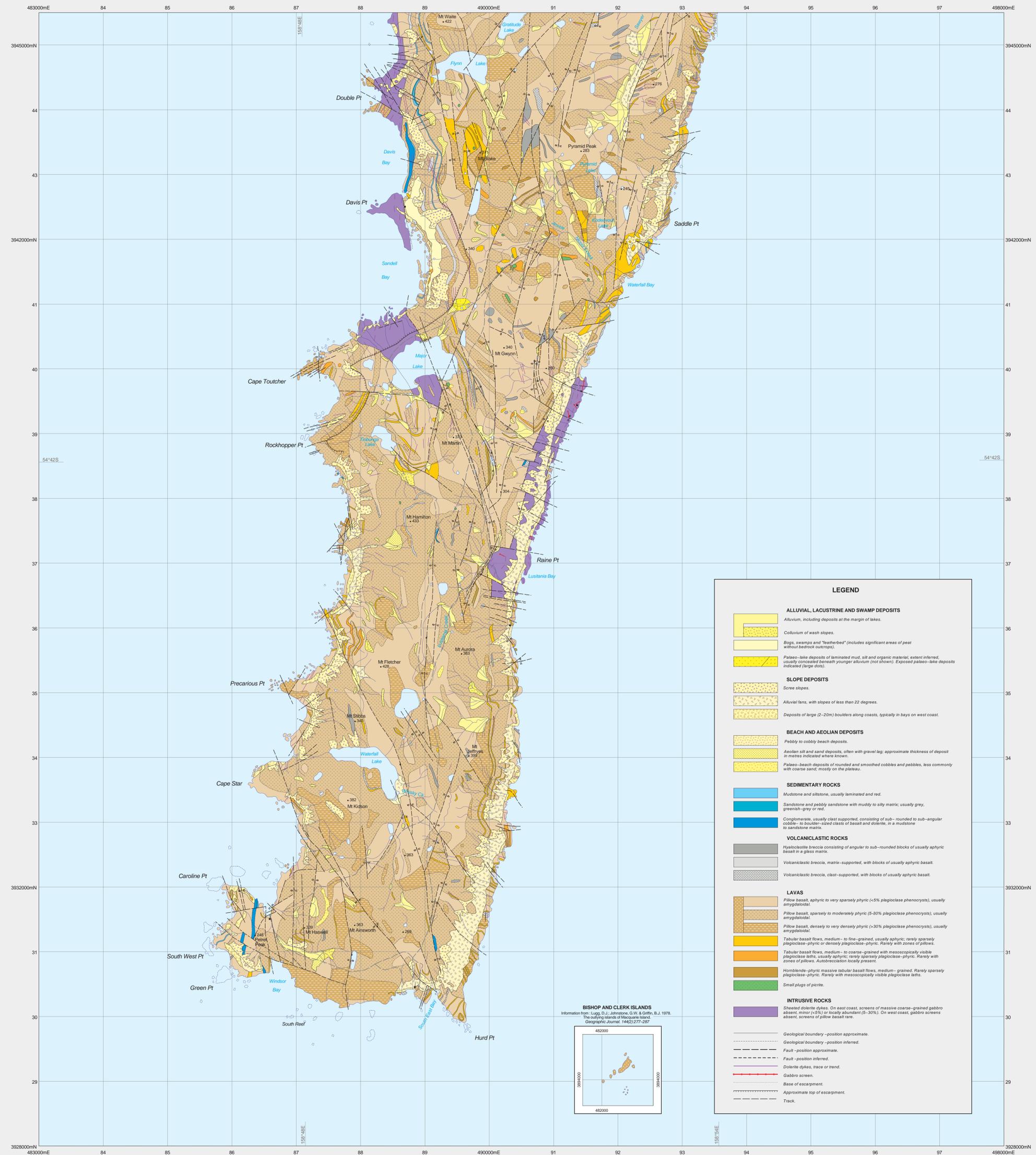


# GEOLOGY OF MACQUARIE ISLAND



### LEGEND

**ALLUVIAL, LACUSTRINE AND SWAMP DEPOSITS**

- Alluvium, including deposits at the margin of lakes.
- Colluvium of wash slopes.
- Bogs, swamps and "featherbed" (includes significant areas of peat without bedrock outcrops).
- Palaeo-lake deposits of laminated mud, silt and organic material, extent inferred, usually concealed beneath younger alluvium (not shown). Exposed palaeo-lake deposits indicated (large dots).

**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.
- Palaeo-beach deposits of rounded and smoothed cobbles and pebbles, less commonly with coarse sand; mostly on the plateau.

**SEDIMENTARY ROCKS**

- Mudstone and siltstone, usually laminated and red.
- Sandstone and pebbly sandstone with muddy to silty matrix, usually grey, greenish-grey or red.
- Conglomerate, usually clast supported, consisting of sub-rounded to sub-angular cobble- to boulder-sized clasts of basalt and dolerite, in a mudstone to sandstone matrix.

**VOLCANICLASTIC ROCKS**

- Hyaloclastite breccia consisting of angular to sub-rounded blocks of usually aphyric basalt in a glass matrix.
- Volcaniclastic breccia, matrix-supported, with blocks of usually aphyric basalt.
- Volcaniclastic breccia, clast-supported, with blocks of usually aphyric basalt.

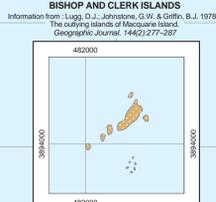
**LAVAS**

- 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.
- Tabular basalt flows, medium- to fine-grained, usually aphyric; rarely sparsely plagioclase-phyric or densely plagioclase-phyric. Rarely with zones of pillows.
- Tabular basalt flows, usually aphyric; rarely sparsely plagioclase-phyric. Rarely with zones of pillows. Auto-brecciation locally present.
- Homblands-phyric massive tabular basalt flows, medium-grained. Rarely sparsely plagioclase-phyric. Rarely with mesoscopically visible plagioclase laths.
- Small plugs of picrite.

**INTRUSIVE ROCKS**

- Sheeted dolerite dykes. On east coast, screens of massive coarse-grained gabbro absent, minor (<5%) or locally abundant (5-30%). On west coast, gabbro screens absent, screens of pillow basalt rare.

Geological boundary - position approximate.  
Geological boundary - position inferred.  
Fault - position approximate.  
Fault - position inferred.  
Dolerite dykes, trace or trend.  
Gabbro screen.  
Base of escarpment.  
Approximate top of escarpment.  
Track.



Geology by B.D. Goscombe, BSc (Hons), PhD and J.L. Everett, 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 (ACRS), 1994. Division of National Mapping Macquarie Island 1:50,000 topographic map (1971), warped to conform with the satellite mosaic, along coastline and dates. 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 production March 1998. Absolute position with respect to horizontal datum and topographic features is approximate.

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Projection: Universal Transverse Mercator  
Horizontal datum - WGS 1984 Zone 57

