



1:125 000 Scale
Geological Map of James Ross Island
I. James Ross Island Volcanic Group
 BAS GEOMAP 2 Series, Sheet 5, Edition 1

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OUTCROP MAP
 Digital Elevation Model
MAP COMPILATION DIAGRAM

GEOLOGICAL LEGEND
 This map depicts the solid geology, i.e. with Holocene ice removed. The representation of geological units does not imply that solid rock outcrops exist everywhere at the surface.

I. VOLCANIC ROCKS
1.1. LAVA-FED DELTAS
 Basaltic volcanic units resembling sedimentary deltas but formed of subaerial pyroclastic rhyolite ('loose beds') overlying independently deposited andesitic breccias. Each unit is a product of a single voluminous eruption, many from vents at Mount Haddington but also from several outlying vents and smaller centres (e.g. Cotton Dome, Island in Prince Gustav Channel). Eruptions were explosive. Deltas formed in three sub-regions: Ulu Peninsula, Eastern & Southern James Ross Island, and Seymour Island. The delta formations are arranged chronologically for each sub-region.

1.2. SEDIMENTARY ROCKS
 Andresen Point Formation: Areas affected by large-scale mass movements, comprising limited volcanic blocks each tens of metres high and up to hundreds of metres long, derived by collapse and degradation of lava-fed delta margins. Mostly Holocene. One Pliocene example known (Island in the Forster Cliffs Formation). Sandstone agglomerates.
 Hebble Cliffs, Weddell Sea & Cockburn Island formations: Neogene-Quaternary sedimentary rocks; poorly bedded sandstone and conglomerate mostly deposited from wind-blown sand. Darkly to blackish grey. Sandstone agglomerates especially present; also highly fossiliferous marine sandstones & conglomerates. Deposits mainly thin (< 10 metres) but locally up to 150 m (Island in the Ridge Formation).
 Mandel Formation: Thick (> 80 m) Late Miocene sequence of fossiliferous diamict and sands variously glauconitic, glauconitic and marly in origin; only known on northwestern James Ross Island, south-west of Cape Lachman.

1.3. UNCORRELATED LAVA-FED DELTA FORMATIONS (all sub-regions)
 Deltas distinguished by pale & dark grey coloration where possible.

2. SYMBOLOGY
 Dashed line: Geotectonic boundary
 Dotted line: Geological boundary (dashed where appropriate)
 Solid line: Building orientation
 Square with dot: Stratigraphical unit notation
 Circle with dot: Neogene sedimentary outcrop (small)
 Square with dot: Neogene sedimentary locality
 Square with dot: Subaerial mass rapping lava-fed delta
 Square with dot: Lava pillow
 Square with dot: At age
 Square with dot: Age in brackets corresponds to source reference
 Square with dot: Age in brackets is probably uncertain
 Square with dot: Symbol used to indicate either (1) stratigraphical correlation uncertain (dashed delta) or an uncorrelated correlation (solid delta)
 Square with dot: Rock coastline
 Square with dot: Ice coastline
 Square with dot: Bathymetric contour (metres)

REFERENCES
 1. Bates, M.A. (1988) New K-Ar age determinations on the James Ross Island Volcanic Group, with an outline of Antarctic Basin Antarctic Survey Memoir 51, 10.