



1:500 000 Scale

Geological Map of Alexander Island

BAS GEOMAP 2 Series, Sheet 8, Edition 1

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Base map data for coastlines, rock outcrops and ice shelves from the Antarctic digital database.

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GEOLOGICAL LEGEND

Geological units are dark coloured (exposed geology) and light tints (inferred geology under ice or snow)

PERIOD	GROUP	UNIT	VOLCANIC AND SEDIMENTARY ROCKS	MAGMATIC AND METAMORPHIC ROCKS
QUATERNARY	None	20	Beethoven Peninsula Volcanic Field c.2.5 Ma - 0.1 Ma. Basaltic lavas, pillow lavas, lapilli tuff and tuff breccia. Lava-fall debris and subsequent tuff cone lithofacies.	
		19	Mount Pinafore Volcanic Field c.7.1 Ma - 5.4 Ma. Basaltic lavas, lapilli tuff, hyaloclastite breccia and tuff breccia.	
NEOGENE	Bellingshansen Sea Volcanic Group	18	Finlandia Formation c.50 Ma - 46 Ma. Basaltic and basaltic andesite lavas, and rare high-Mg andesite flows.	
		17	Elgar Formation c.54 Ma - 49 Ma. Basaltic and basaltic andesite lavas, rare high-Mg andesite flows. Bedded tuffs and agglomerates. Up to 2000 m thick.	
		15	Colbert Formation c.65 Ma - 62 Ma. Rhyolitic to dacitic ignimbrite, crystal-lithic tuffs, breccia and volcanoclastic units. Total thickness is >2000 m.	16
		14	Staccato Magmatic Complex c.82 Ma - 71 Ma. Massive andesite lavas on the southern coast of Monteverdi Peninsula. Diorite intrusion at Staccato Peaks. Emplacement of aliochthonous mélange belt and translation of Charcot Island associated with Late Cretaceous plate reorganisation.	16
PALEOGENE	Alexander Island Volcanic Group	13	Mars Glacier Member Sandstone, subordinate mudstone and conglomerate. Fossiliferous horizons. Up to 1000 m thickness. c.102 Ma.	
		12	Triton Peak Member Coarse sandstone and conglomerate. Fossiliferous horizons and rare tuff beds. Up to 900 m thickness. c.105 Ma.	
		11	Daimos Ridge Member Sandstone with interbedded mudstone. Bed thickness increases upwards. Up to 700 m thickness. c.114 Ma.	
		8	Pluto Glacier Formation Mudstone-siltstone succession with rare sandstone-conglomerate beds. Up to 800 m thickness. Ba: Rhea Corner Member conglomerates. c.126 Ma.	
		7	Spartan Glacier Formation Monotonous succession of mudstone and siltstone. Up to 1000 m in thickness. c.130 Ma.	
		6	Himalia Ridge Formation Basal succession of mudstone and upper 1000 m andesite/rhyolite dominated. Rare rhyolite-basaltic units. Up to 2000 m in thickness. 140-142 Ma. Ba: Jupiter Glacier Member - 90 m sandstone beds representing an abrupt shallowing event.	
		5	Ablation Point Formation Slumped blocks of sandstone and interbedded sandstone/mudstone. Rare volcanic beds. Up to 440 m in thickness. c.155 Ma.	
		4	Atoll Nunataks Formation Thinly bedded green and black siliceous mudstone with rare granule conglomerates. Up to 1500 m in thickness. c.177 Ma.	
		3	Seiene Nunatak Formation Conglomeratic and sandstone units derived from the accretionary complex. Fluvial succession at Zebra Ridge. Up to 150 m in thickness. c.182 Ma.	
		2	Mount King Beds Basal mudstone units transition to abundant sandstone-conglomerate units. Locally, mudstone units preserve a diverse macrofauna. Up to 1000 m c.182 Ma.	
CRETACEOUS	Fossil Bluff Group	10		10
		9		9
JURASSIC	None	1		
		1a		
PERMIAN	LeMay Group	1a		

GEOLOGICAL SYMBOLS

--- Inferred contact	▨ Bedding	🌲 Fossil forest locality
- - - - - Unconformity	⊥ Cleavage	🌿 Significant plant fossil locality
▬ Normal fault (lick on downthrown side)	⤴ Overturned bedding	🦴 Significant invertebrate fossil locality
▬ Reverse fault (teeth on hanging wall)	▨ Laterally continuous bedding	🌀 Radiolaria-bearing cherts
▬ Strike-slip fault	▬ Dyke	
▬ Axial trace of antiform		
▬ Axial trace of synform		

OTHER SYMBOLS

🌊 Coastline (adjacent to ice shelf)	🌊 Coastline (adjacent to ocean)	🧊 Ice shelf
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