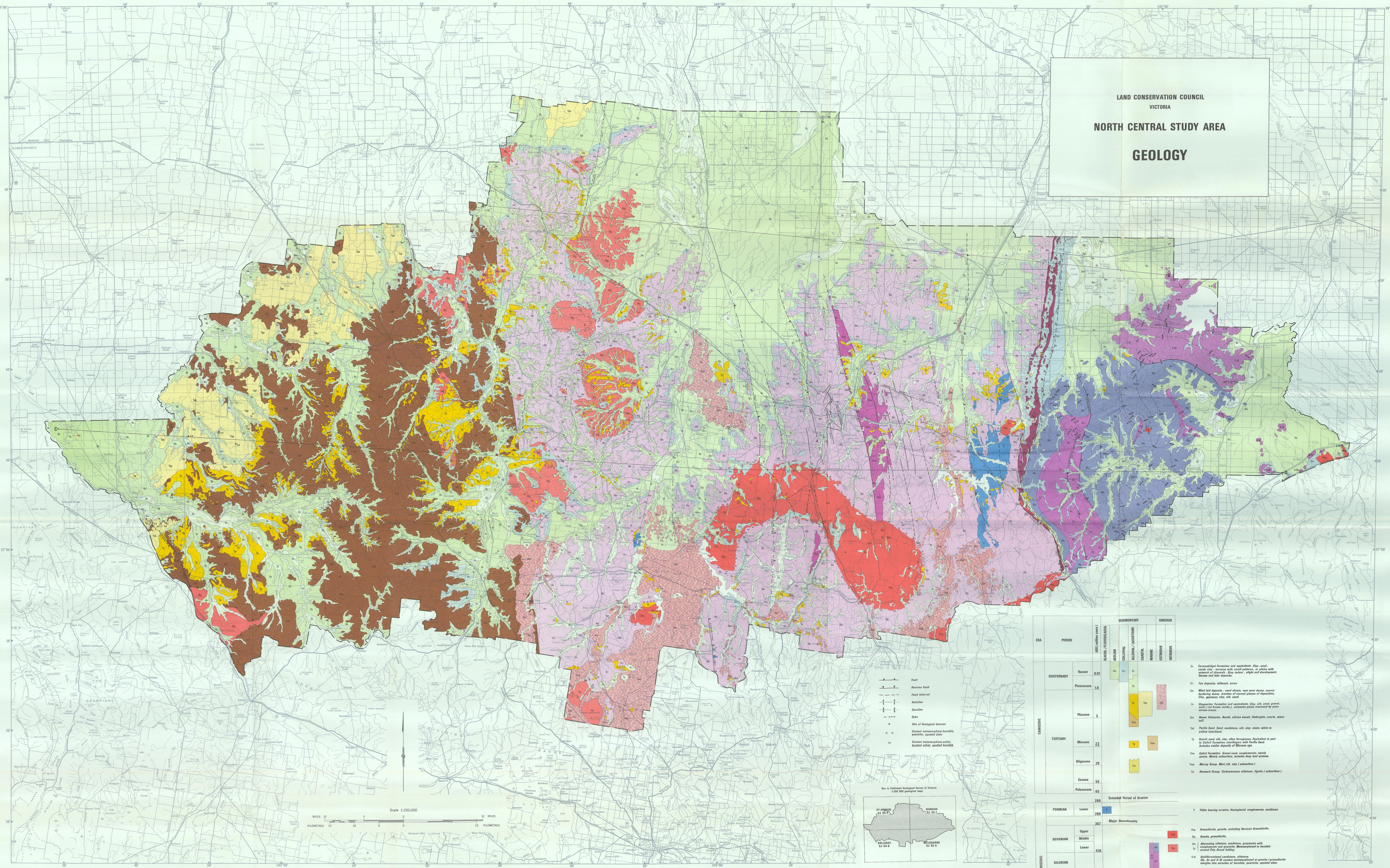


LAND CONSERVATION COUNCIL
VICTORIA

NORTH CENTRAL STUDY AREA

GEOLOGY

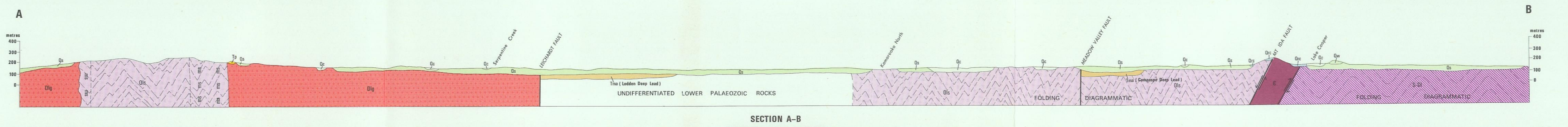
ERA	PERIOD		AGE (million years)	Symbols	Description
CAINOZOIC	QUATERNARY	Recent	0.01	Qc	Coonambidgal Formation and equivalents. Clay, sand, sandy clay: terraces with scroll patterns, or plains with network of channels. Grey colour, slight soil development. Swamp and lake deposits.
				Orc	Fan deposits, hillwash, scree.
				Ow	Wind laid deposits: sand sheets, east west dunes, source bordering dunes, lunettes of several phases of deposition. Clay, gypseous clay, silt, sand.
		Pleistocene	1.8	Qs	Shepparton Formation and equivalents. Clay, silt, sand, gravel, soils (red brown earths); extensive plains traversed by prior stream traces.
				Qvn	Newer Volcanics. Basalt, olivine basalt, limburgite, scoria, minor tuff.
	TERTIARY	Pliocene	5	Tpp	Parilla Sand. Sand, sandstone, silt, clay, shale; white to yellow lateritised.
				Tp	Gravel, sand, silt, clay, often ferruginous. Equivalent in part to Calivil Formation, interfingers with Parilla Sand. Includes similar deposits of Miocene age.
				Tma	Calivil Formation. Gravel sand, conglomerate; mainly quartz. Mainly subsurface, includes deep lead systems.
		Miocene	23	Tmm	Murray Group. Marl, silt, clay (subsurface)
		Oligocene	39	Ter	Renmark Group. Carbonaceous siltstone, lignite (subsurface).
		Eocene	55		
		Palaeocene	65		
			260		Extended Period of Erosion
PALAEOZOIC	PERMIAN	Lower	289	P	Tillite bearing erratics, fluvioglacial conglomerate, sandstone.
			367		Major Unconformity
	DEVONIAN	Upper		Dug	Granodiorite, granite, including Harcourt Granodiorite.
		Middle		Dlg	Granite, granodiorite.
		Lower	416	Dls / Ss	Alternating siltstone, sandstone, graywacke with conglomerate and quartzite. Metamorphosed to hornfels around Dug. Broad folding.
	SILURIAN		446	S-Dl	Undifferentiated sandstone, siltstone. Dls, Ss and S-Dl contact metamorphosed at granite / granodiorite margins into aureoles of hornfels, quartzite, spotted slate.
	ORDOVICIAN	Upper		Oms / Ols	Shale, slate, sandstone; thinly bedded, tightly folded. Subdivision based on biostratigraphic evidence (graptolites) not lithology.
		Middle		Є-O	Sediments similar to Lower Ordovician but include green shales. Age uncertain due to lack of fossils. Both Ordovician (Oms, Ols) and Cambrian-Ordovician (Є-O) sediments contact metamorphosed at granite / granodiorite margins into aureols of hornfels, quartzite, spotted slate(m) or schist, knotted schist, schistose hornfels (ms).
		Lower	509		
	CAMBRIAN	Upper		Є	Goldie shale, Knowsley East Beds. Silicified shale, quartzite, chert, with tuff in lower parts. Heathcote Greenstone. Diabase, basalt, andesite, ash, tuff, agglomerate, serpentinite, fault rock, silicified shale, argillite, quartzite, chert, jasper.
		Middle			
		Lower	575		

Columns: SEDIMENTARY (GLACIAL / FLUVIOGLACIAL, AEOLIAN, COLLUVIAL, ALLUVIAL / LACUSTRINE, COASTAL, MARINE); IGNEOUS (EXTRUSIVE, INTRUSIVE)

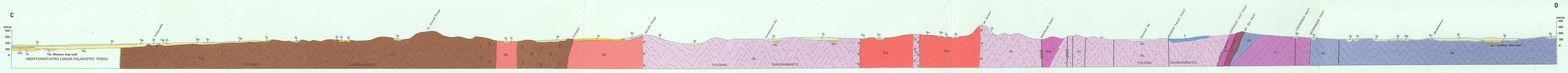
- Fault
- Reverse Fault
- Fault Inferred
- Anticline
- Syncline
- Dyke
- Site of Geological Interest
- m m — Contact metamorphism-hornfels, quartzite, spotted slate
- ms — Contact metamorphism-schist, knotted schist, spotted hornfels

Scale 1:250,000
MILES 10 5 0 10
KILOMETRES 15 10 5 0 15

Key to Published Geological Survey of Victoria 1:250 000 geological maps
ST.ARNAUD SJ 54-4 | BENDIGO SJ 55-1 | BALLARAT SJ 54-8 | MELBOURNE SJ 55-5



SECTION A–B
HORIZONTAL SCALE 1:500 000
VERTICAL SCALE 1:50 000
VERTICAL EXAGGERATION 1:10



SECTION C–D
HORIZONTAL SCALE 1:500 000
VERTICAL SCALE 1:50 000
VERTICAL EXAGGERATION 1 : 10

MAP No. 2