

LEGEND FOR THE GEOLOGICAL MAP OF THE COBEQUID HIGHLANDS, NOVA SCOTIA

EAST AND WEST SHEETS

1978

STRATIFIED ROCKS ADJACENT TO COBEQUID HIGHLANDS

MESOZOIC	TRIASSIC	
	TSB	FUNDY GROUP SCOTS BAY FORMATION: red and green siltstone, calcareous siltstone
	TNM	NORTH MOUNTAIN BASALT: basalt flows
	TB	BLOMIDON FORMATION: red siltstone, wacke
	TW	WOLFVILLE FORMATION: red quartz and lithic wacke, siltstone, polymictic conglomerate
	TBW	BLOMIDON AND WOLFVILLE FORMATIONS: undifferentiated
	UPPER CARBONIFEROUS (Westphalian B to D)	
	CP	PICTOU GROUP Undivided; grey, red, siltstone, wacke
	CC-U	CUMBERLAND GROUP UPPER PART: red and grey siltstone, wacke, polymictic conglomerate
	CC-L	LOWER PART: red and grey siltstone, lithic wacke, polymictic conglomerate; Pc-Lc coal bearing, grey siltstone, wacke
	PCP	PICTOU AND CUMBERLAND GROUPS: undifferentiated
	No stratigraphic order implied between areas.	
Eastern Area		
CBP	RIVERSDALE GROUP BOSS POINT FORMATION: grey to red lithic wacke, siltstone, shale	
CM	MILLSVILLE CONGLOMERATE: brown-red polymictic conglomerate, lithic wacke	
North Central Area		
CBP	RIVERSDALE GROUP BOSS POINT FORMATION: grey to red lithic wacke, siltstone, shale	
CCI	CLAREMONT FORMATION: brown red arkosic conglomerate; minor red wacke, siltstone	
Cmb	MIDDLEBOROUGH FORMATION: dusky-red siltstone, shale, wacke, minor conglomerate	
Southern Area		
CPa	RIVERSDALE GROUP PARRSBORO FORMATION: red and grey siltstone, shale, wacke; red polymictic conglomerate at base	
CWB	WEST BAY FORMATION: red, greenish-grey siltstone, wacke, conglomerate	
(Namurian)		
CCa	CANSO GROUP Undivided; grey wacke, siltstone, some calcareous siltstone, minor red siltstone	
PALEOZOIC	LOWER CARBONIFEROUS (Viséan)	
	CW	WINDSOR GROUP Undivided; grey calcareous siltstone, grey limestone, gypsum
	(Tournaisian and (?) older)	
	CH	HORTON GROUP Undivided; grey, reddish-brown shale, siltstone, wacke

STRATIFIED ROCKS OF THE COBEQUID HIGHLANDS

(Late Viséan to Namurian)	
CLo	LONDONDERRY SUCCESSION: grey, green quartz wacke; red, purple siltstone
DEVONIAN TO LOWER CARBONIFEROUS	
DCN	NUTTBY SUCCESSION: grey, red siltstone, wacke, red polymictic conglomerate, rhyolitic volcanic rock
DEVONIAN (Eifelian to Famennian)	
DRJ-U	RIVER JOHN GROUP UPPER UNIT: red polymictic conglomerate, lithic wacke
DRJ-L	LOWER UNIT: basalt, grey to red lithic wacke, polymictic conglomerate
SILURIAN TO DEVONIAN (Llandoverian to Pridolian and younger)	
SDPP	PORTAPIQUE - PARRSBORO SUCCESSION: greyish-green quartz wacke, siltstone, red siltstone, rhyolitic and andesitic volcanic rock
SILURIAN (Llandoverian to Pridolian)	
SE	EARLTOWN SUCCESSION: (in ascending order) SE-1 grey siltstone, mudstone; SE-2 rhyolitic, dacitic and some andesitic flows, tuff; SE-3 rhyolitic, dacitic flows; SE-4 blue-grey wacke siltstone, tuff
SE-A, SE-B	SE-A rhyolitic and dacitic flows, tuff; SE-B intermediate tuff; volcanic wacke
SILURIAN (?) (May be in part younger)	
SA	ADVOCATE SUCCESSION: grey quartz wacke, siltstone, intermediate tuff, basalt, rhyolite, minor quartz arenite; granitic clast conglomerate
AGE OF ROCKS UNKNOWN	
PHE	HARRINGTON - EAST RIVER SUCCESSION grey quartz wacke, siltstone, granitic clast conglomerate, tan quartz arenite, shale; minor tuff
PNR	NORTH RIVER SUCCESSION: andesitic tuff, quartz wacke, siltstone, minor limestone
No stratigraphic order implied	
PPB	BASS RIVER METAMORPHIC SUITE (No stratigraphic order implied) PPB-1 andesitic meta-volcanic rock; PPB-2 quartzite, biotite schist; PPB-3 hornblende and feldspar-chlorite gneiss; PPB undifferentiated
PPg	Granite Gneiss
PPt	MOUNT THOM COMPLEX: Biotite-muscovite ± garnet schist, amphibolite, granite gneiss
HADRYNIAN	
HJ	JEFFERS SUCCESSION: chlorite-rich tuff, green luffaceous wacke, siltstone

IGNEOUS ROCKS OF THE COBEQUID HIGHLANDS

Letter designation identifies pluton

CARBONIFEROUS

Cg	Hornblende granite; O Salmon River, P West North River, Q Gain Brook, R Chain Lakes, S Byers Lake, T Hart Lake, U Pleasant Hills, V Chignecto
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DEVONIAN TO CARBONIFEROUS

DCg	Hornblende granite; I Shatter Brook, J North River, K West Moose River, L Gilbert Mountain, M Hanna Brook, N Apple River
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DCd	Hornblende and/or pyroxene diorite; A Sully Brook, B Cranberry Brook, C Chignecto River, D McEiman Brook, E Gleason Brook, F Wyvern, G New Prospect, H Soldier's Brook
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SYMBOLS

Bedding (tops known, overturned; tops unknown inclined, vertical)

Flow layering in volcanic rock (inclined, vertical)

Structures in the Cobequid Highlands

Slaty or fracture cleavage associated with F_1 folds

Anticline, F_1 , upright } arrow indicates

Syncline, F_1 , upright, overturned/plunge direction

Local cataclastic fabric in plutonic rocks

Cleavage and foliation in Jeffers Succession

Schistosity or metamorphic foliation associated with T_1, B_1, F_1 folds

Antiform F_1 , arrow indicates plunge direction

Structures north and south of the Cobequid Highlands

Anticline, upright } arrow indicates

Syncline, upright/plunge direction } overturned

Faults (defined, approximate, assumed; arrows indicate relative movement; solid circle indicates down thrown side; single arrow represents dip direction)

Geological boundaries (defined, approximate, assumed)

Fossils: (flora or fauna; spores)

Mineral Occurrences

Cu - copper, Fe - iron, Pb - lead, Zn - zinc, As - arsenic, U - uranium, Ba - barite, Mn - manganese, C - coal

ABBREVIATIONS

CF: Cobequid Fault LVF: Loganville Fault

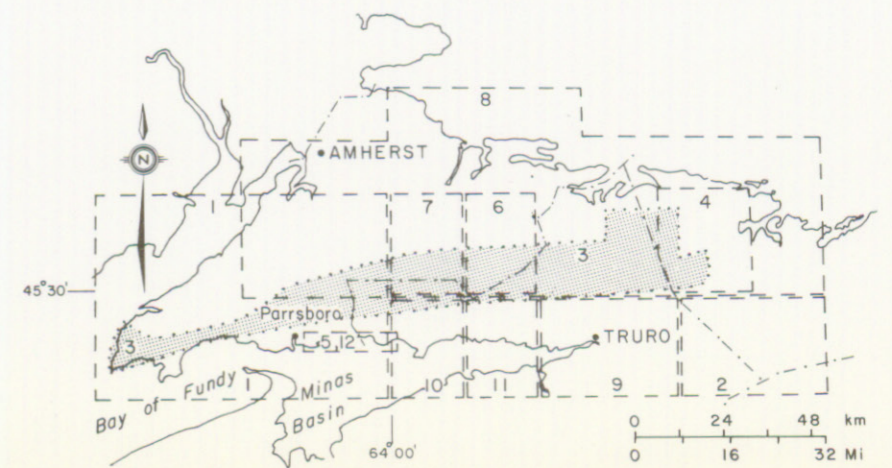
LF: Londonderry Fault BBF: Balmoral Brook Fault

PF: Portapique Fault NRF: North River Fault

RF: Riversdale Fault AF: Alma Fault

EF: Economy Fault

SOURCES OF GEOLOGICAL INFORMATION



- 1 Capeland, M.J., 1959, Geological Map of Cumberland County (West Part), Nova Scotia; Geol. Surv. Canada Map 1070 A.
- 2 Benson D.G., 1967, Geological Map of Hopedale Area, Nova Scotia; Geol. Surv. Canada Map 1215 A.
- 3 Geology of the Cobequid Highlands by D.G. Kelley (1962-1968) modified by H.V. Donahoe (1974-1977); P.L. Wallace (1976-1977); assisted by P. McMahon (1975), M. Cullen and R. Moore (1976), and M. D'Orsay and J. Lee (1977). Ann. Rept. Activities, N.S. Dept. Mines, Rept. 75-1, 76-2, 77-1, 78-1.
- 4 Gillis J.W., 1964, Geology of Northwestern Pictou County, Nova Scotia, Canada; Unpublished Ph.D. dissertation, The Pennsylvania State Univ.
- 5 Liew, M.Y., 1976, Structure, Geochemistry and Stratigraphy of Triassic Rocks, North Shore of Minas Basin, Nova Scotia; Unpublished M.Sc. Thesis, Acadia Univ.
- 6 Norman, G.W.H. and Bell, W.A., 1938, Geology of the Oxford Sheet (East Half), Cumberland and Colchester Counties, Nova Scotia; Geol. Surv. Canada Map 409 A.
- 7 Norman, G.W.H. and Bell, W.A., 1938, Geology of the Oxford Sheet (West Half), Cumberland and Colchester Counties, Nova Scotia; Geol. Surv. Canada Map 410 A.
- 8 Rodgers, Seglund and Shaw Associates, 1959, Surface Geology Map of Northern Nova Scotia; Unpublished map.
- 9 Stevenson, I.M., 1958, Geology of Truro Area, Colchester, Hants and Pictou Counties, Nova Scotia; Geol. Surv. Canada Map 1058 A.
- 10 Weeks, L.J., 1946, Geology of Bass River Area, Colchester and Hants Counties, Nova Scotia; Geol. Surv. Canada Map 867 A.
- 11 Weeks, L.J., 1946, Geology of Londonderry Area, Colchester and Hants Counties, Nova Scotia; Geol. Survey Canada Map 874 A.
- 12 Olsen, P. and Donahoe, H.V., 1977, unpublished detailed stratigraphy of the Triassic in the Five Islands region.

PALEONTOLOGICAL DATA

- SPORES:
- Identification of spores by M.S. Barss and D.C. McGregor, Geol. Surv. Can., from samples submitted by E.S. Belt, J.W. Gillis, and D.J. Kelly.
- Identification of spores by M.S. Barss, Geol. Surv. Can., from samples submitted by H.V. Donahoe.
- FOSSILS: STRATIFIED ROCKS OF THE COBEQUID HIGHLANDS
- Capeland, M.J., 1964, Stratigraphic Distribution of Upper Silurian Ostracoda, Stonehouse Formation, Nova Scotia; Geol. Surv. Can., Bull. 117, 20p.
- Harper, C.W., 1973, Brachiopods of the Arisaig Group (Silurian-Lower Devonian) of Nova Scotia; Geol. Surv. Can., Bull. 215, 103p.
- FOSSILS AND FLORA: STRATIFIED ROCKS ADJACENT TO THE COBEQUID HIGHLANDS
- See sources of geological information.

RADIOMETRIC DATA

- Rb/Sr whole rock isochrons by R. Cormier and J. Stirling (unpublished, 1977)
- Chignecto Pluton (V) 339 ± 22 m.y. $87\text{Sr}/86\text{Sr} = 0.7064 \pm 0.0073$
- Hart Lake Pluton (T) 331 ± 17 m.y. $87\text{Sr}/86\text{Sr} = 0.7076 \pm 0.0095$
- Byers Lake Pluton (S) 331 ± 27 m.y. $87\text{Sr}/86\text{Sr} = 0.7097 \pm 0.0093$
- I.U.G.S. Subcommittee on Geochronology decay constants used (Steiger, R.H. and Jager, E., 1977, Earth and Planetary Sci. Letters, vol. 36, p. 359-362).

This is a preliminary map, subject to modification