

Geology and soils

Charles Tarnocai

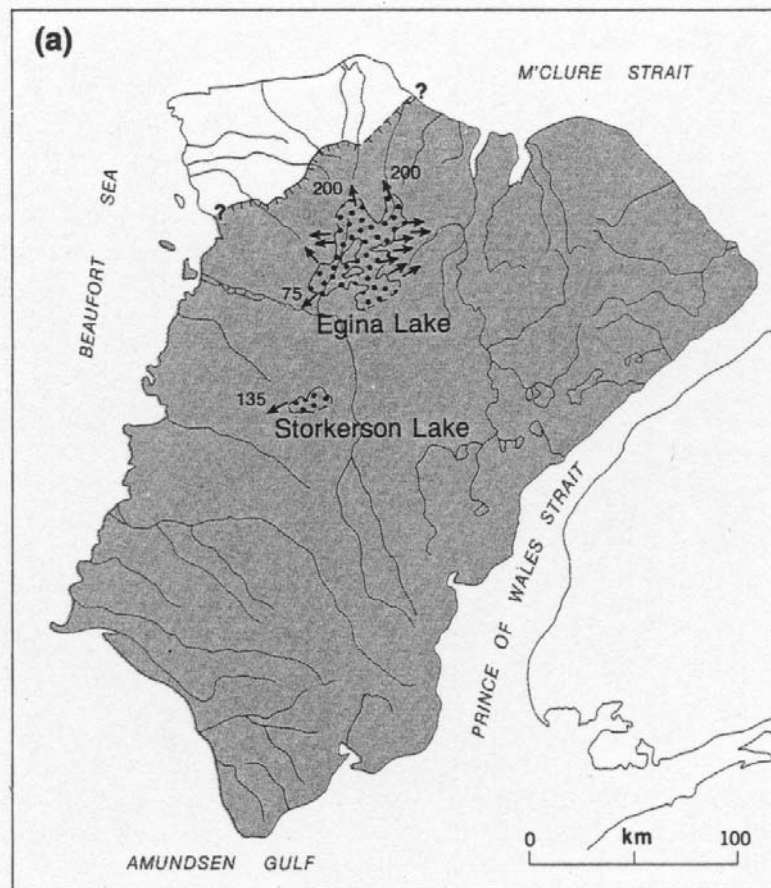
Table 2.5. Correlation of Quaternary deposits and events in the northern Interior Plains of Canada

WESTERN CANADIAN ARCTIC ARCHIPELAGO							TUKTOYAKTUK COASTLANDS AND AREA TO SOUTH	YUKON COASTAL PLAIN	BONNET PLUME BASIN			
BANKS ISLAND			MELVILLE ISLAND		NW VICTORIA IS		Hughes (1987) Rampton (1988)		Rampton (1982)		Hughes, et al. (1981)	
Vincent (1983, 1984)			Hodgson, et al. (1984)		Vincent (Unpubl.)							
Schuyter Point Sea Seds.- 11.2 (31)			Viscount Melville Sound Ice Shelf		Winter Harbour Till (Viscount Melville Sound Ice Shelf) > 9.9 (42) < 11.3 (GSC-3409)		Kelly Lake Phase > 10.6 (28)					
Passage Point Seds.- 10.6 (GSC-1437)			Russell Stage		Unnamed Till		15.5 (65) Sidiqi Stage = Tutsi Lake Phase					
Unnamed Interstage - > 41 (15)			Unnamed Sea 11.7 (35)		Unnamed Sea 12.6 (21)		> 12.9 (22) > 13.1 (39)					
East Coast-46 (UQT-142), 24.7 (62)			AMUNDSEN GLACIATION		WISCONSINAN GLACIATION		WISCONSINAN GLACIATION					
Investigator and Meek Point seas-> 19 (20)			Unnamed Sea > 33 (13) > 42.4 (14)		Unnamed Interstadial? > 37 (48) > 38 (47) 71.8 (UQT-230)		Unnamed Interstadial 33.8 (26) 17.9 (10)		? Unnamed Interstadial 14.4 (23) 22.4 (18)		Hungry Creek Till	
Sand Hills Advance (Carpenter Till)			M'Clure Stage		Unnamed Till = Jesse Till		Unnamed Sea > 35 (11); 43.5 (63) > 37 (12); 48.2 (64)		Sabine Phase		Interstadial (?) Seds. 36.9 (30) > 40 (GSC-2401)	
Pre Amundsen Sea > 37 (51) 92.4 (UQT-143)			Prince of Wales Lobe (Jesse Till) Prince Alfred Lobe (Mercy and Bar Harbour tills) Thesiger Lobe (Sachs Till)		(In part Prince of Wales Lobe)		Toker Point Stage = Franklin Bay Stage		Buckland Till		?	
CAPE COLLINSON INTERGLACIATION > 61 (60); 69.9 (UQT-117) > 49 (45)			BRUNHES				LIVERPOOL BAY INTERGLACIATION > 36 (56) > 38 (53) > 39 (52)		BUCKLAND GLACIATION			
Big Sea-104.6 (UQT-92)			Thomsen Glaciation		Sea = Big Sea? Unnamed Till = Kange and Baker tills		Fluvial, Marine and Deltaic Seds. Harrowby Sea		Marine, Perimarine Fluvial and Terrestrial Interglacial (?) Seds.			
Pre Thomsen Sea - Kellett, Baker and Kange tills			MORGAN BLUFFS INTERGLACIATION > 200 (UQT-118) > 730		Mason River Glaciation		STANTON SEDS. KITTIGAZUIT FM KIDLUIT FM Horton Sea Kendall Seds. ↓ ?					
Post Banks Sea			Banks Glaciation		Dundas Till							
Pre Banks Sea Bernard, Plateau and Durham Heights tills			MATUYAMA									
PREGLACIAL WORTH POINT FM												






Radiocarbon age (ka) (in brackets lab no. or reference no., cf. Table 2.3) > 33 (13)


Th/U age (ka) (lab no.) 92.4 (UQT-143)

GSC

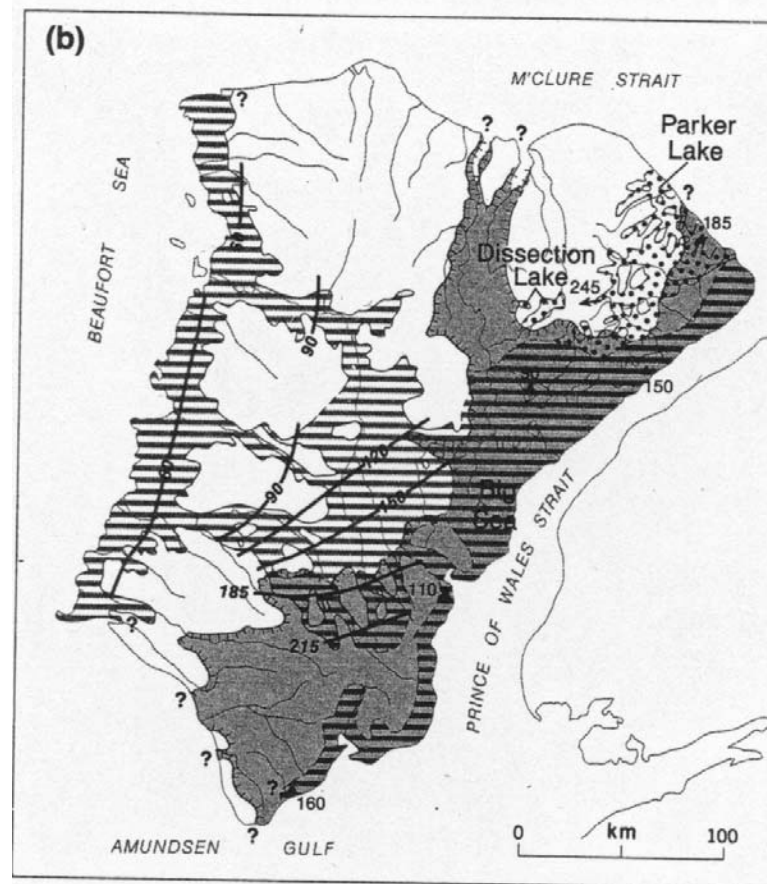


Banks Glaciation

-  Area submerged by sea
-  Area submerged by a glacial lake
-  Area covered by Amundsen Glacier
-  Area covered by Thomsen Glacier
-  Area covered by Banks Glacier

 Unglaciaded area

- Geological boundary (definite, approximate)
- Lake outlet (m) 60
- Approximate maximum elevation of water plane (m) 150
- Site with fossiliferous deltaic sediments (m) 90
- Limit of ice advance (defined, assumed)



Thomsen Glaciation



Area submerged by sea



Area submerged by a glacial lake



Area covered by Amundsen Glacier



Area covered by Thomsen Glacier



Area covered by Banks Glacier



Unglaciated area

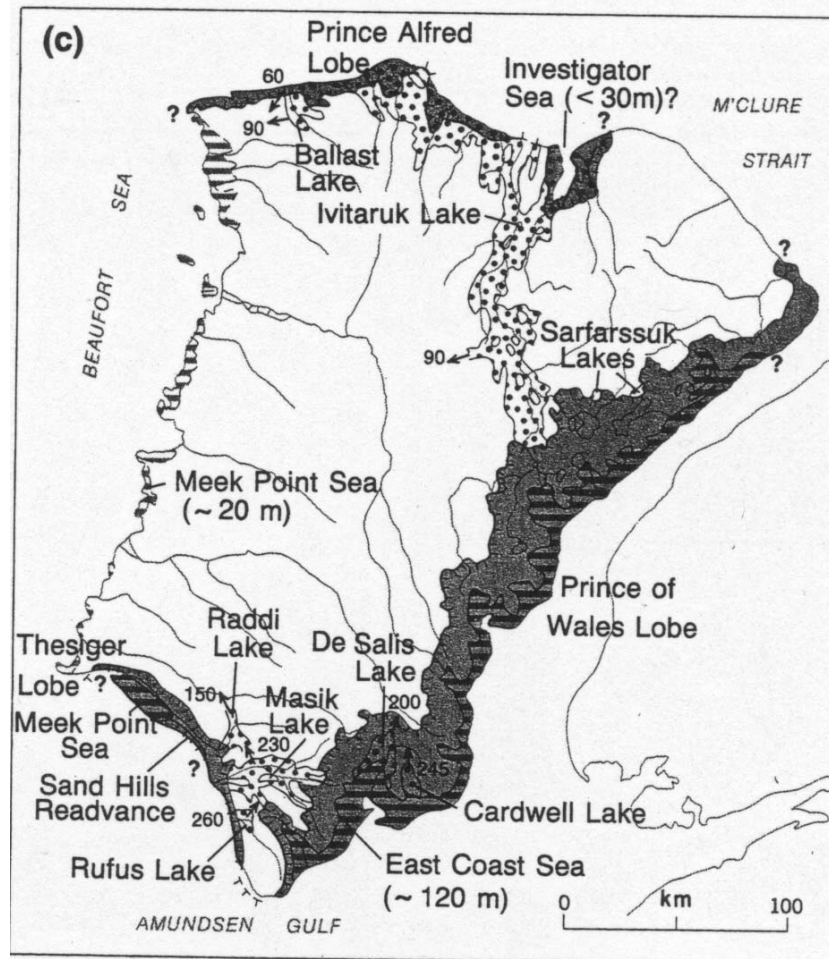
Geological boundary (definite, approximate)

Lake outlet (m) 60

Approximate maximum elevation of water plane (m) 150

Site with fossiliferous deltaic sediments (m) 90

Limit of ice advance (defined, assumed)



Amundsen Glaciation / M'Clure Stade



Area submerged by sea



Area submerged by a glacial lake



Area covered by Amundsen Glacier



Area covered by Thomsen Glacier



Area covered by Banks Glacier



Unglaciaded area

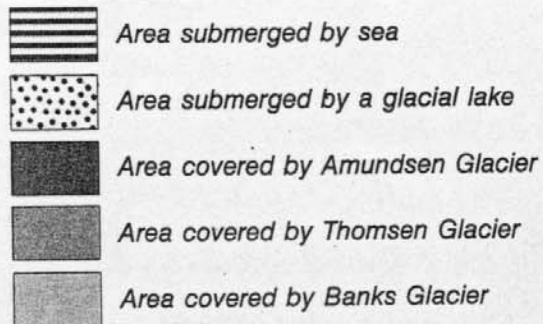
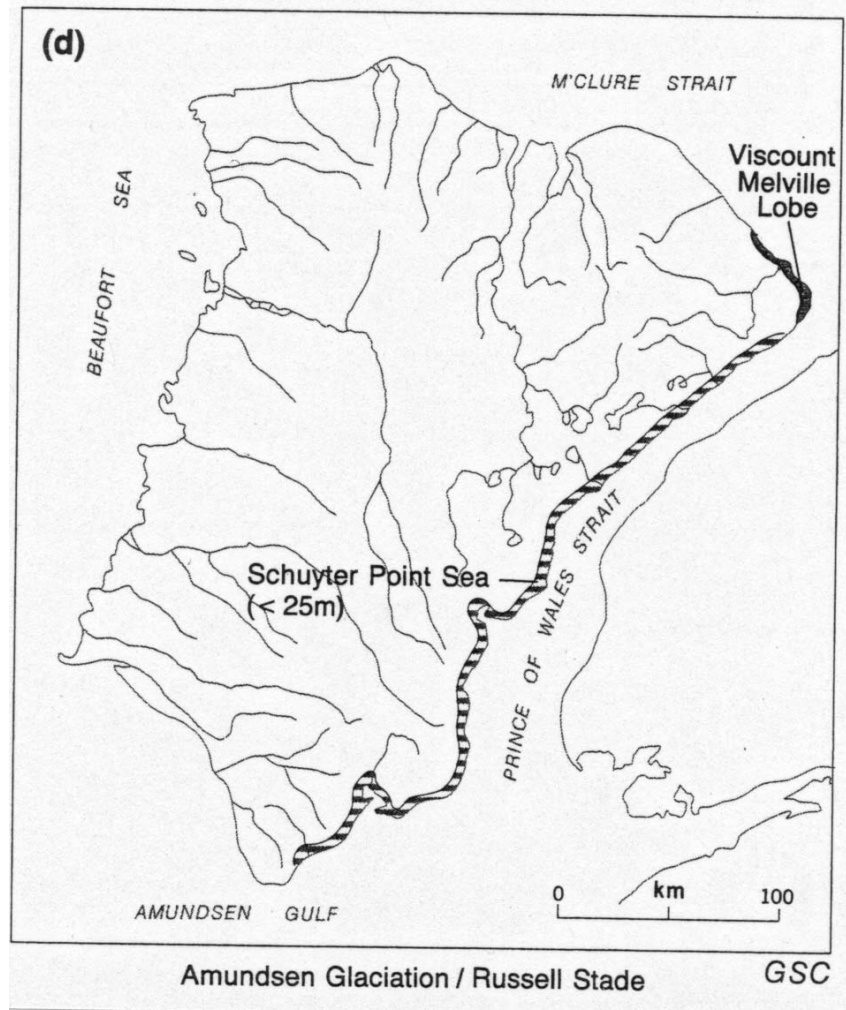
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Unglaciaded area

Geological boundary (definite, approximate)

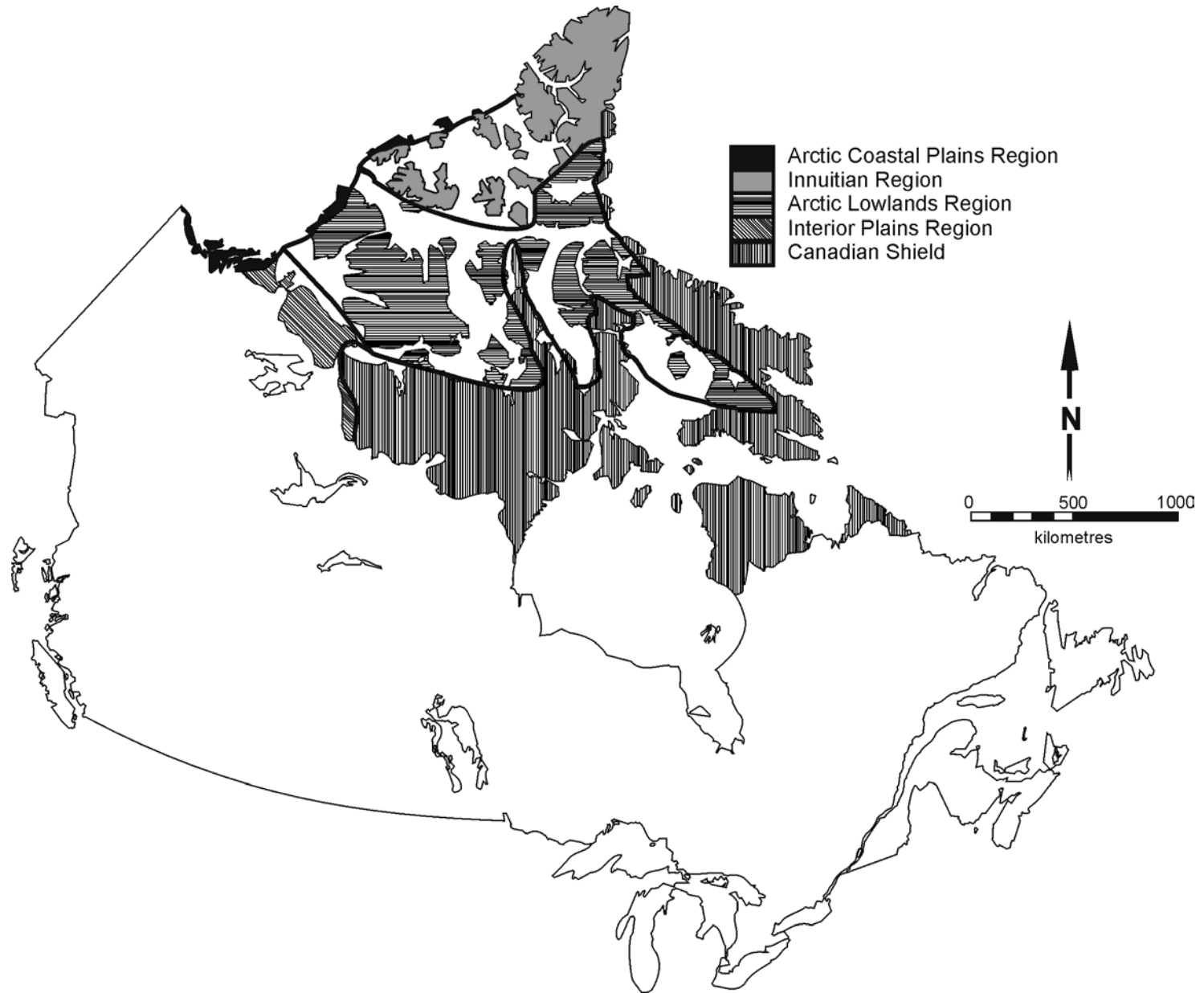
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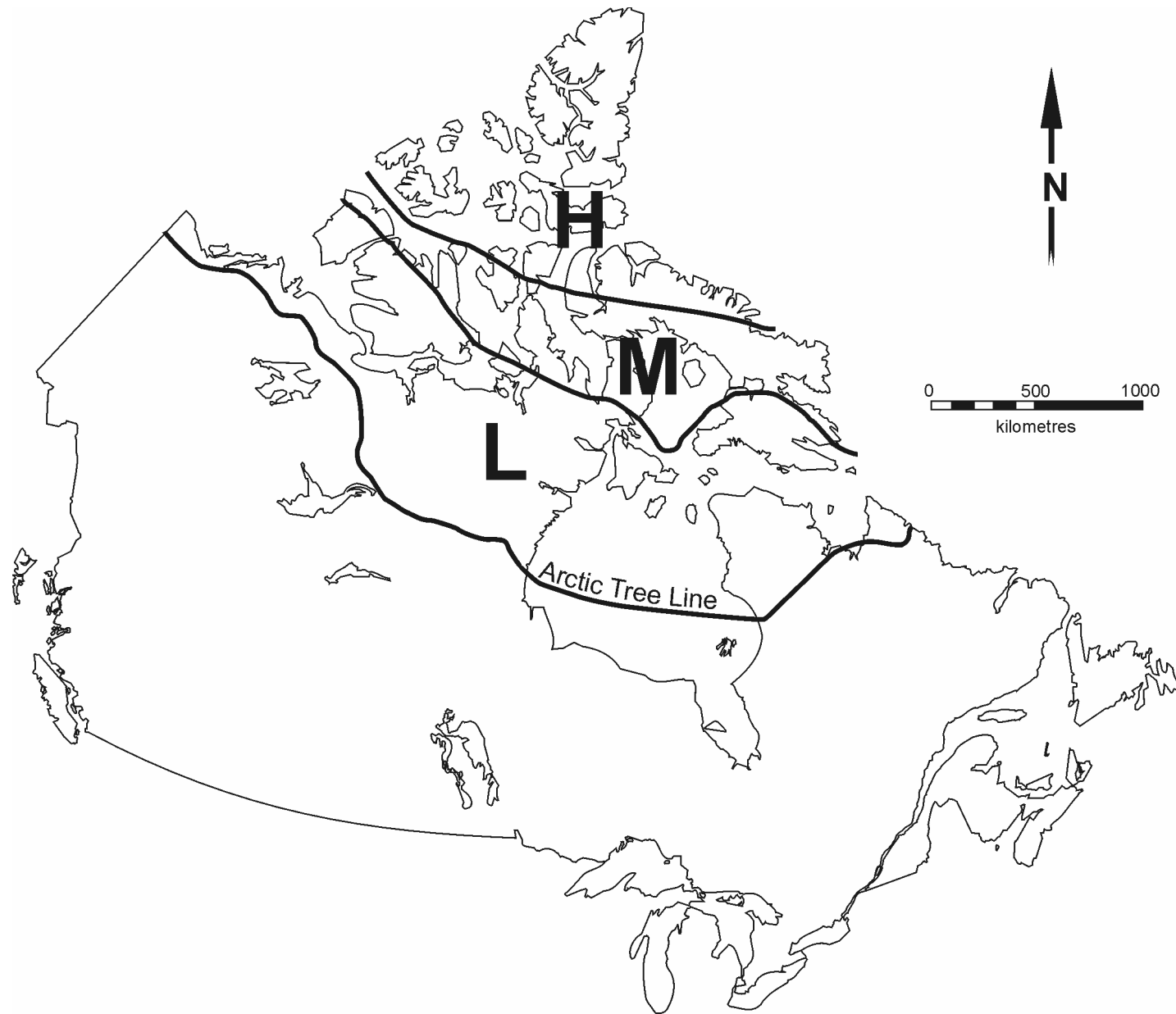
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Limit of ice advance (defined, assumed)

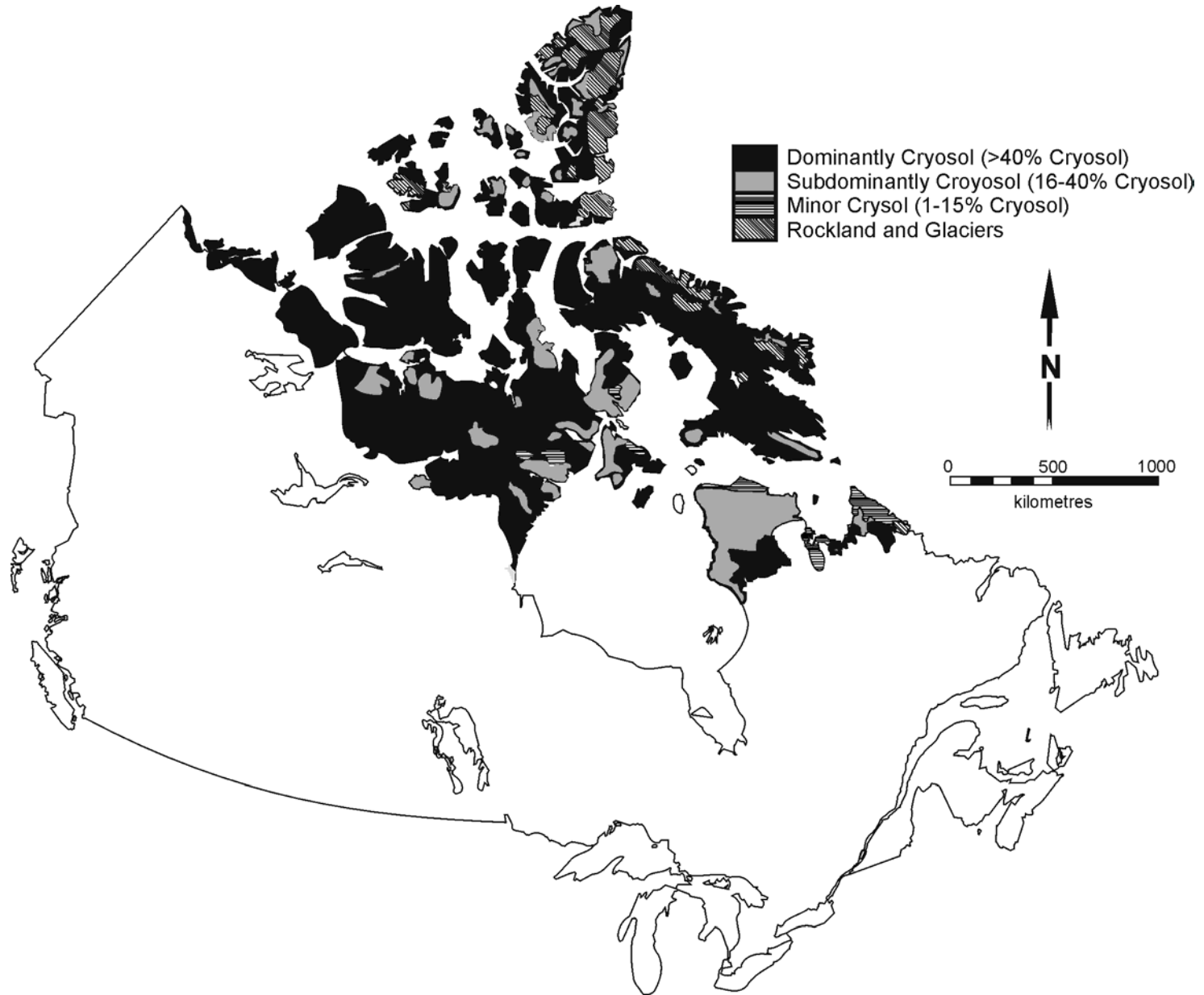
Physiographic regions of Arctic Canada, Figure X (File: map 3)

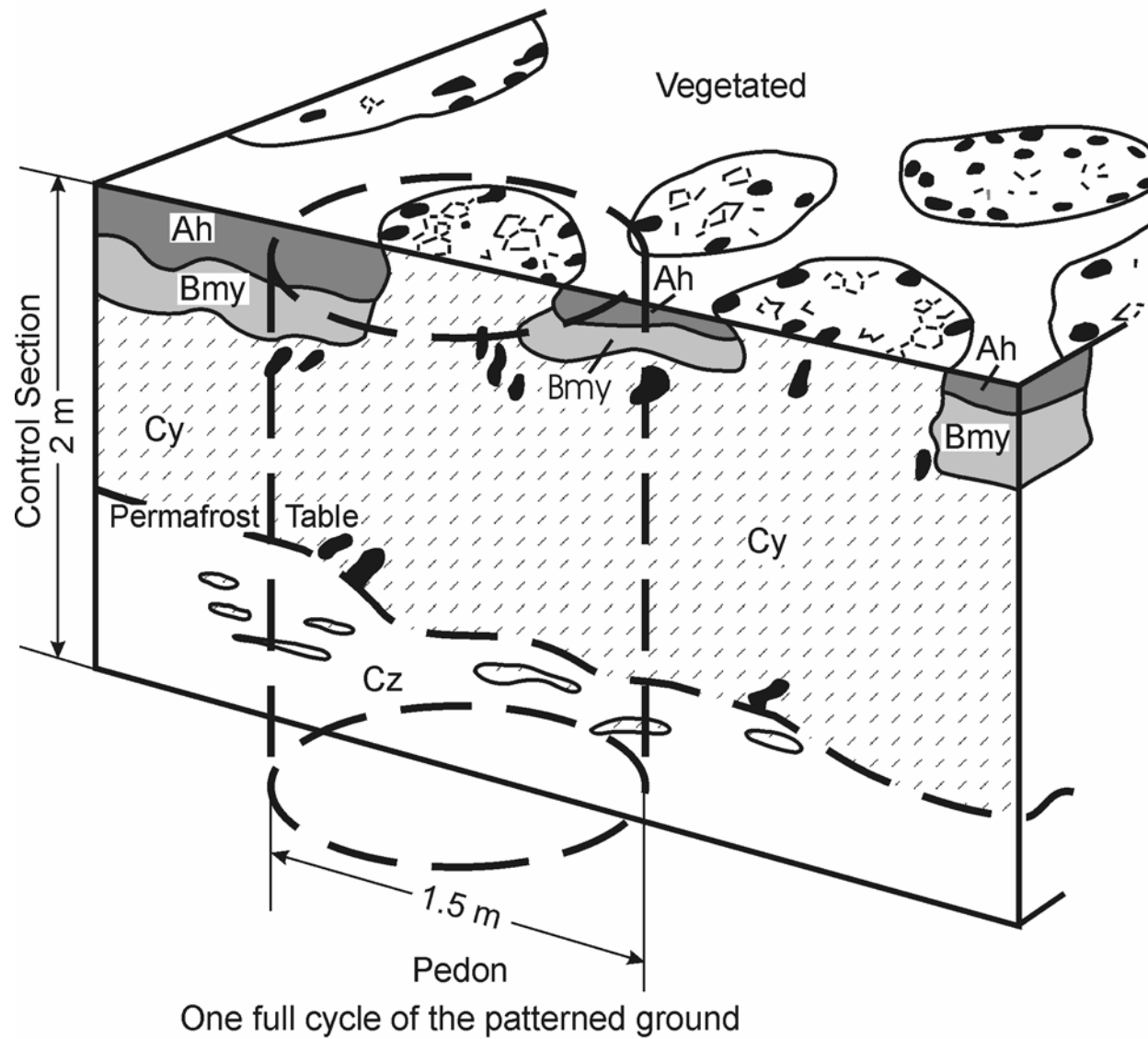


Cryosols of Arctic Canada, Figure X (File: map 1)

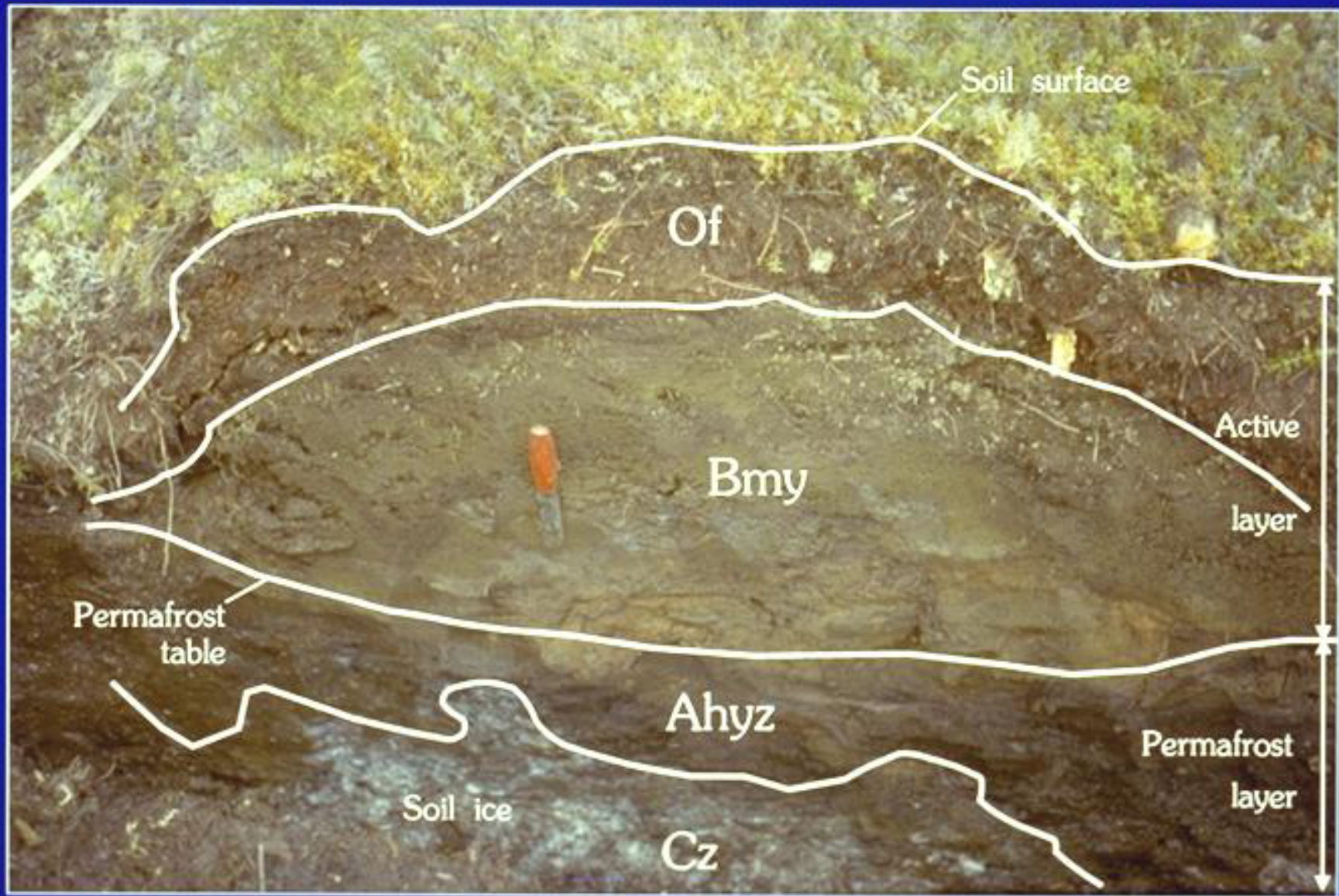


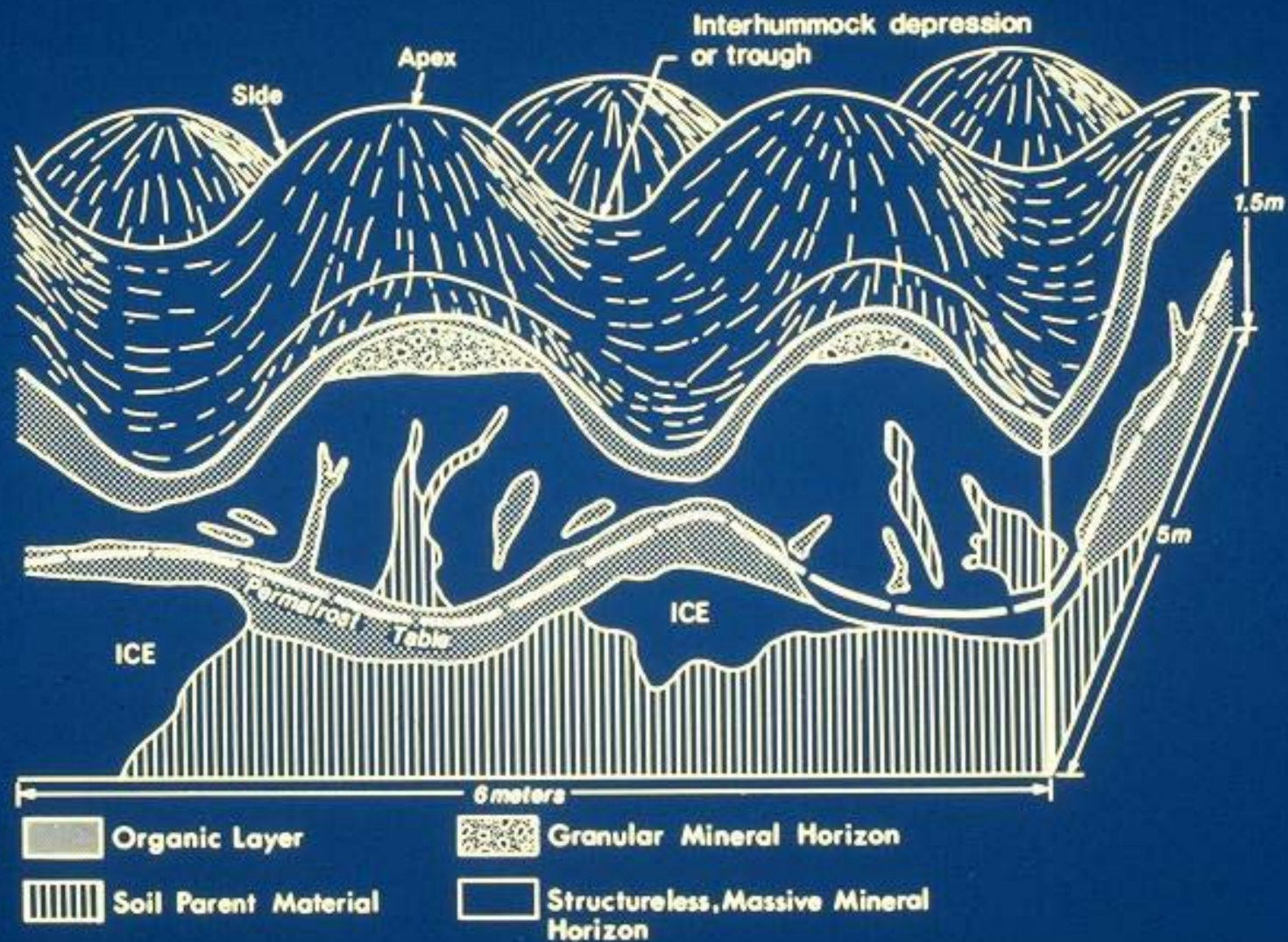
Cryosols of Arctic Canada, Figure X (File: map2)

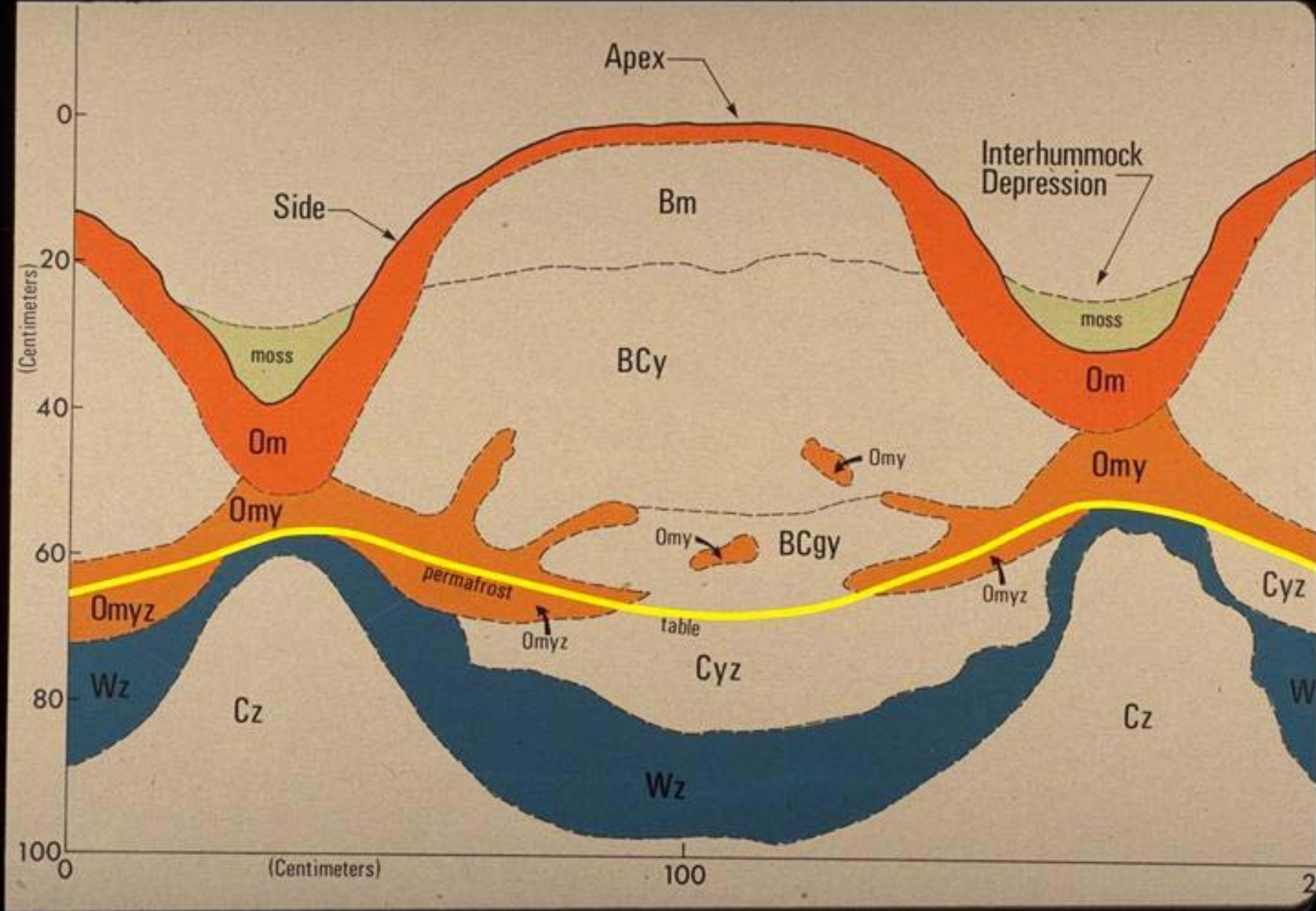




-  cracks or small polygons
-  stones
-  ice lenses







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Dominant Forcing Factors

ORGANISMS
(addition of organic matter)

COLD SOIL TEMPERATURES
(cryogenic processes)

Active Layer

**WEATHERING AND
TRANSLLOCATION OF
MATERIALS**
(horizon dev.)

Permafrost Layer

PARENT MATERIALS

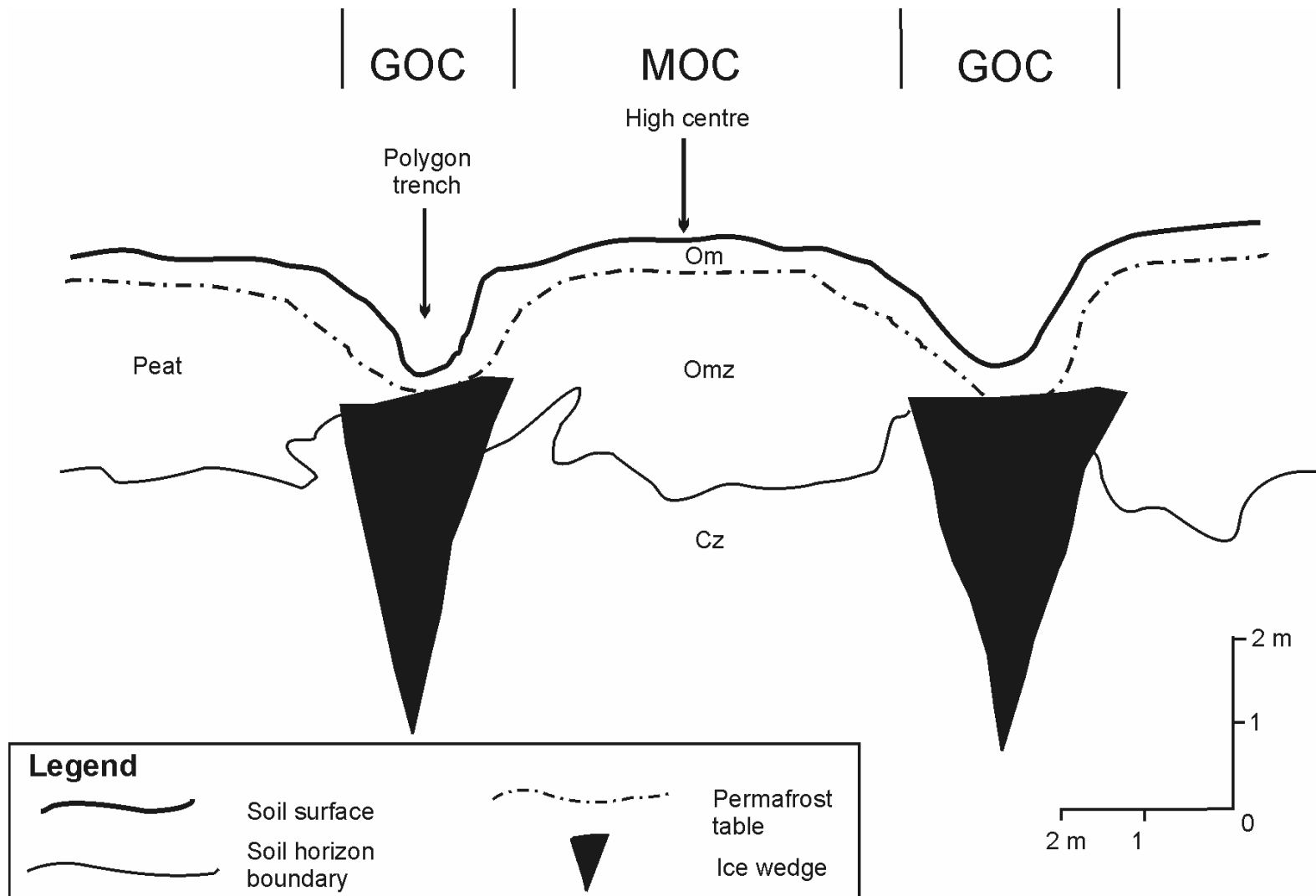


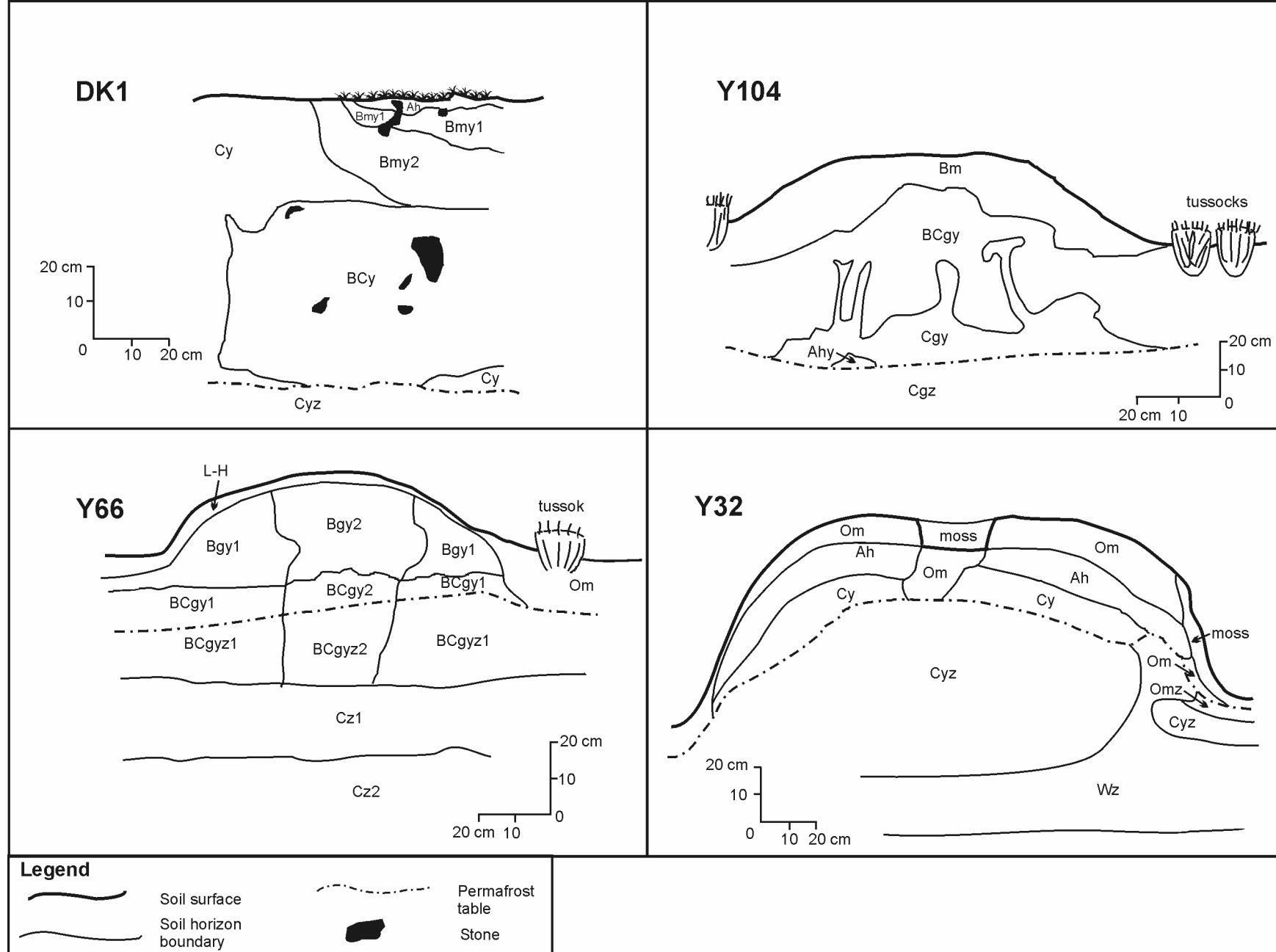






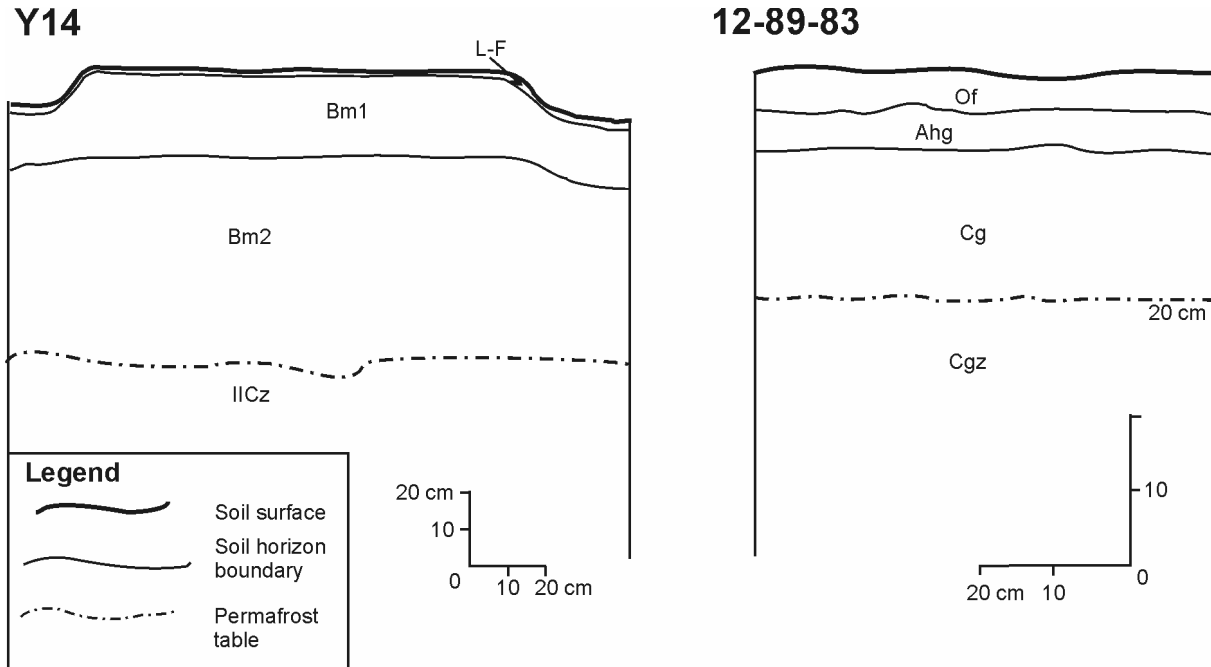
Classification of Cryosols in Canada, (File: Figure 2)





Classification of Cryosols in Canada, (File: Figure 3)

Classification of Cryosols in Canada, (File: Figure 4)



Low center lowland polygons, (File:Img0041a)

