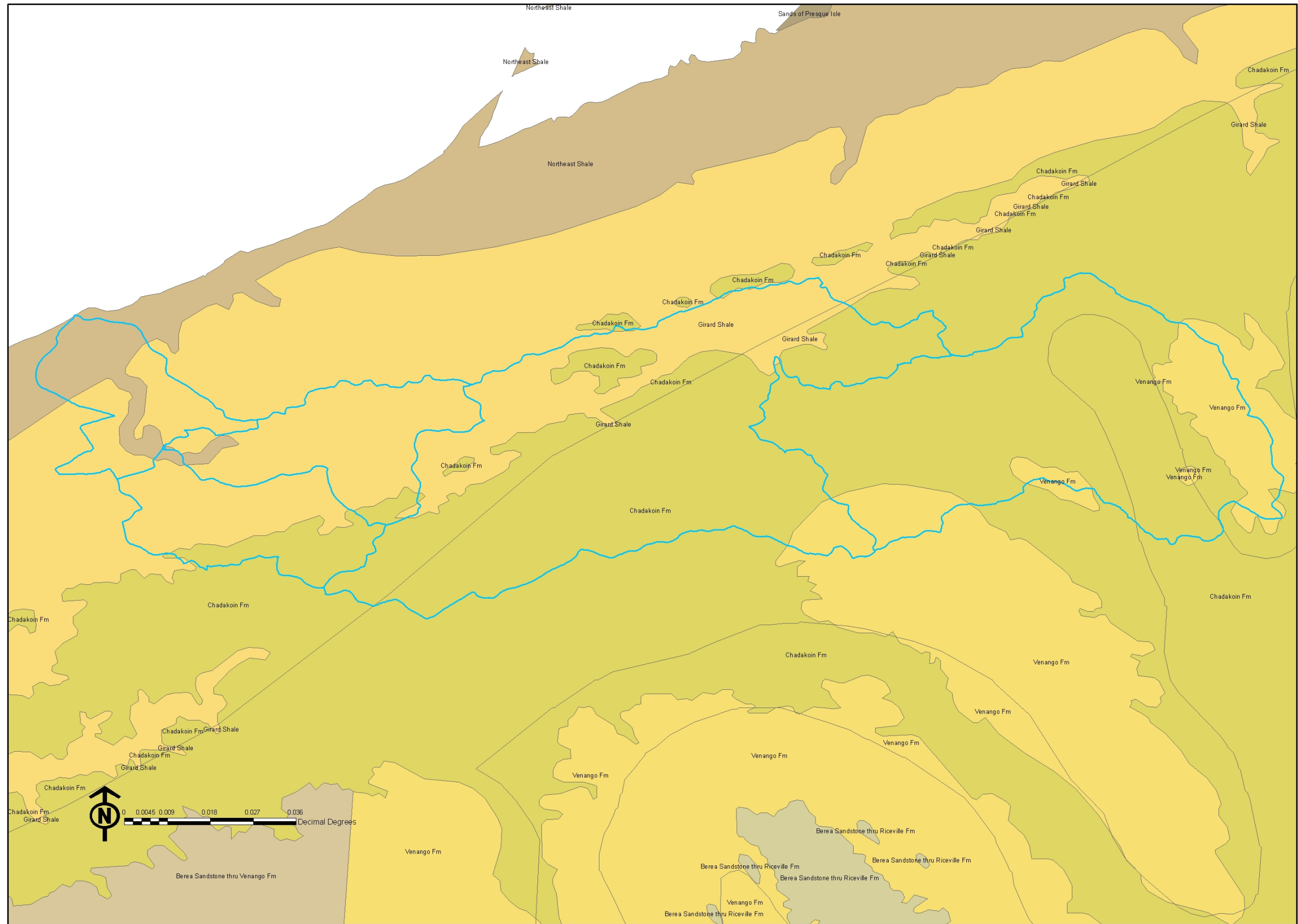
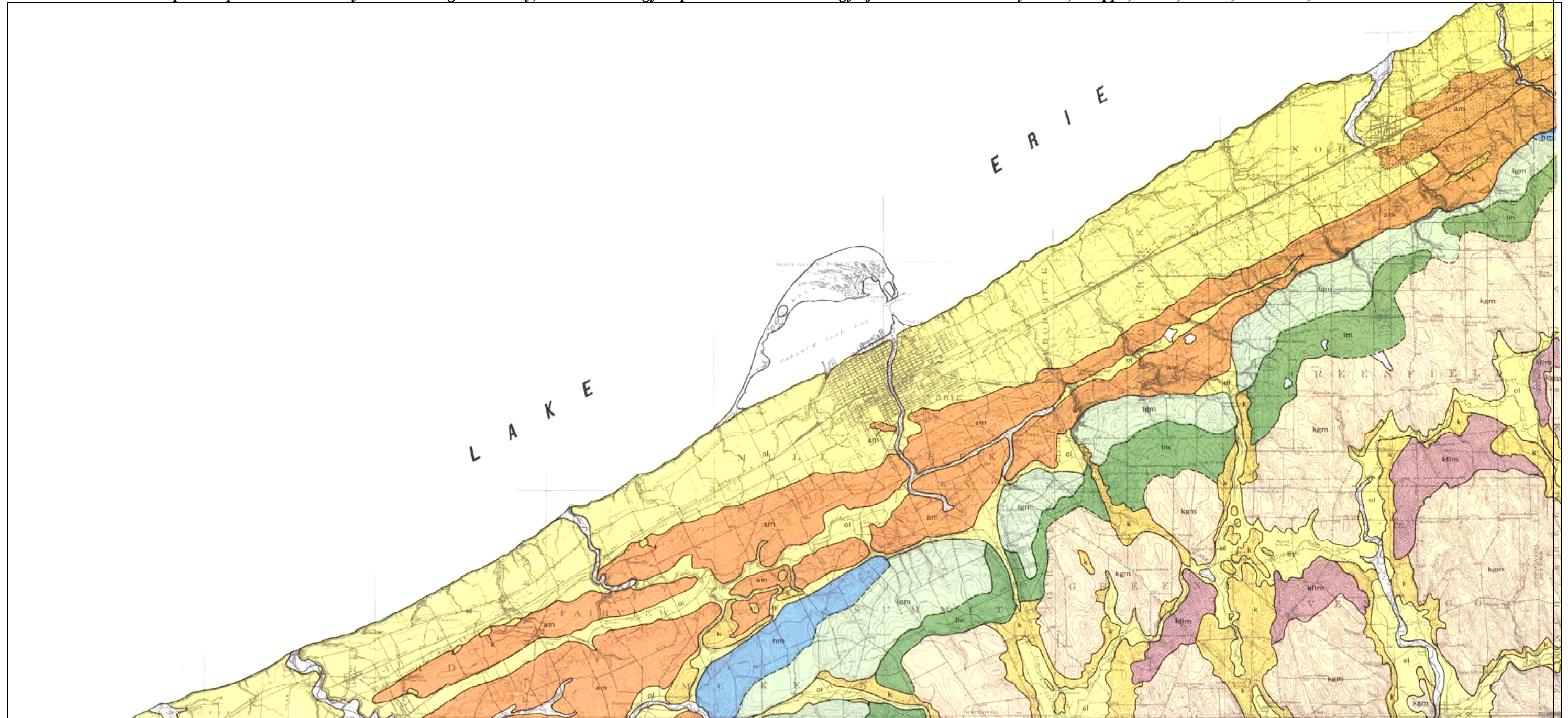


Surficial Bedrock Geology



Map Excerpted From: Pennsylvania Geological Survey, General Geology Report 32 - Glacial Geology of Northwestern Pennsylvania, Sheppa, White, Droste, and Sitler, 1959

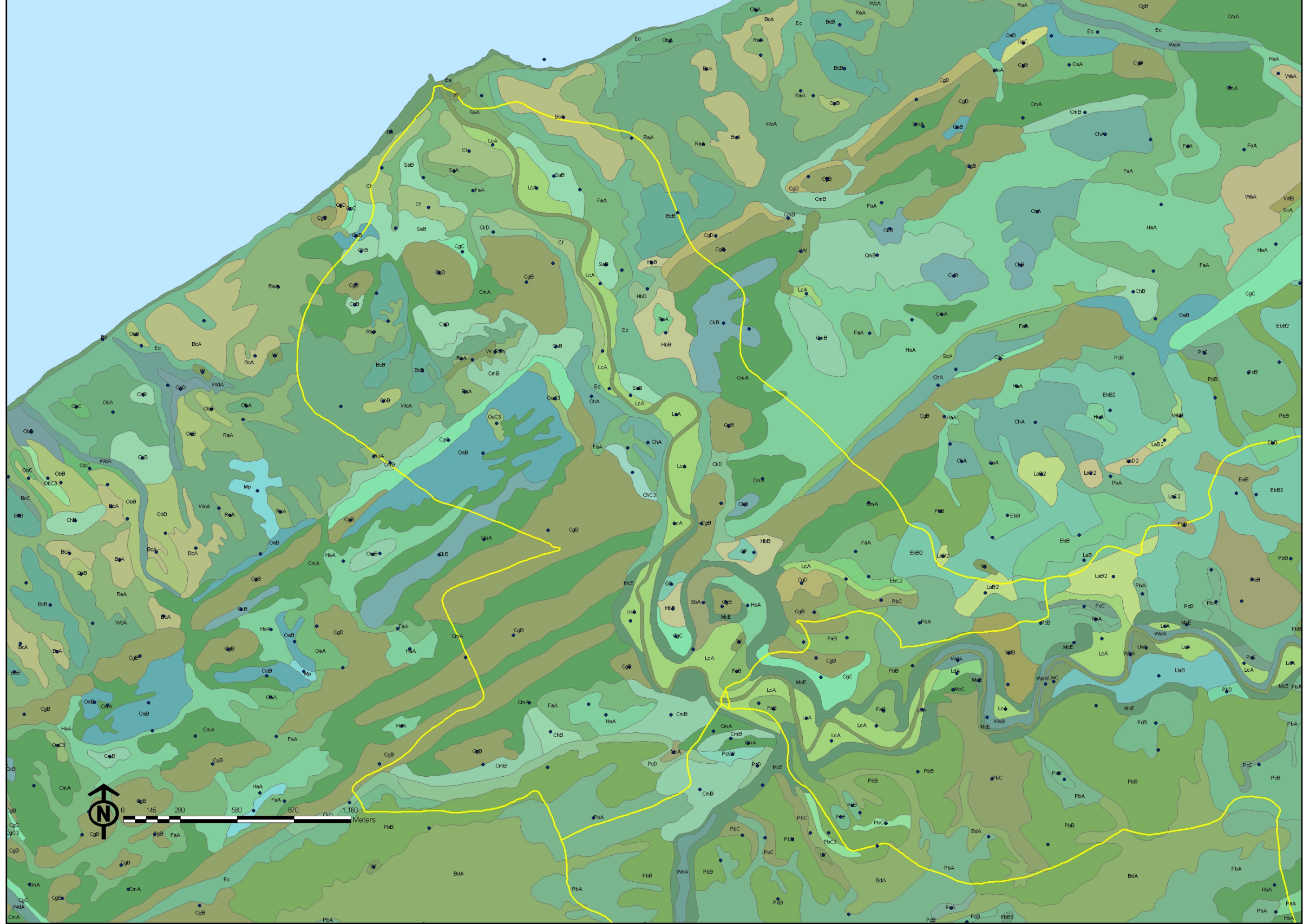


EXPLANATION

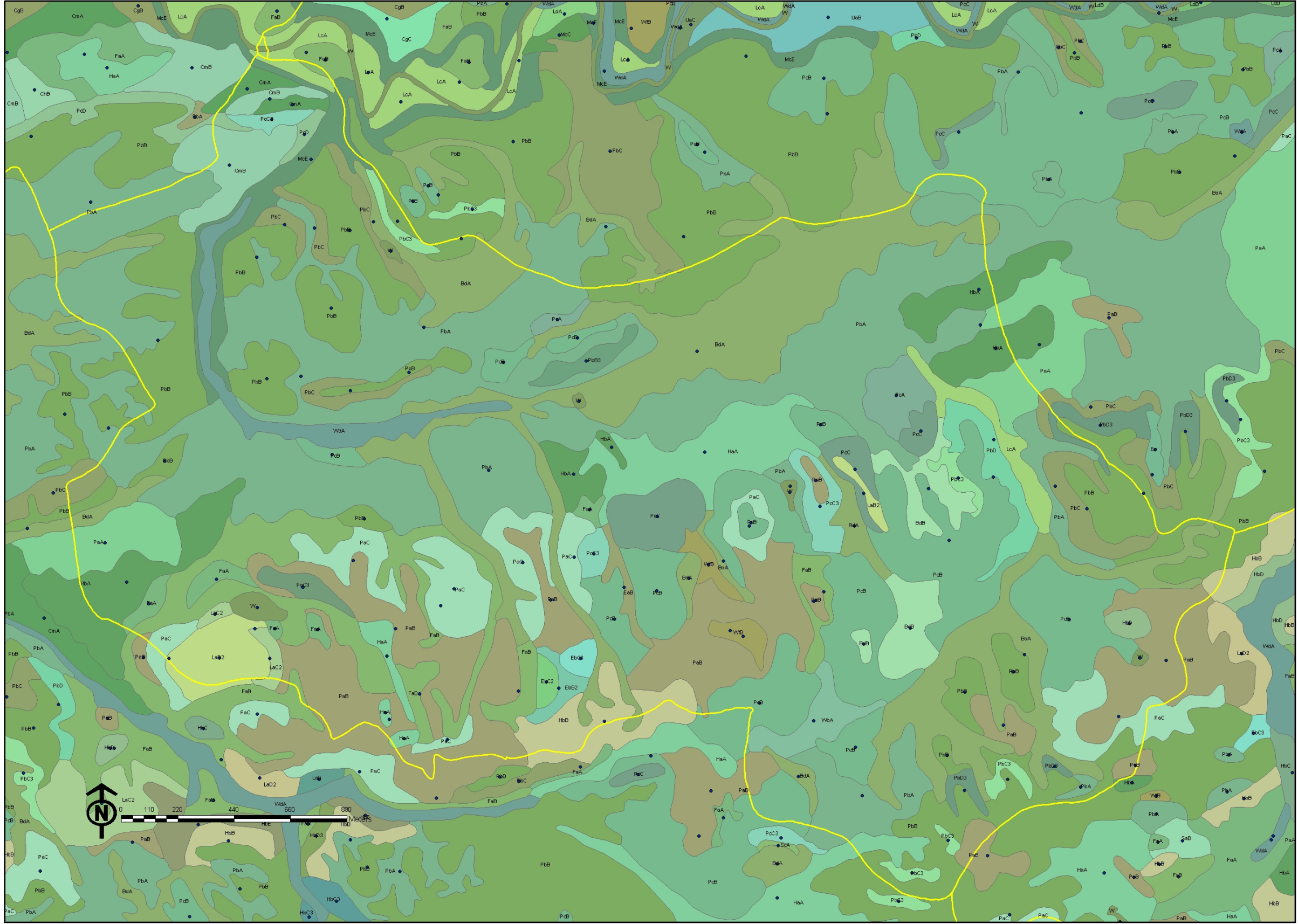
		Unit	Topographic Features	Character of Material	Topography		
PLEISTOCENE	WISCONSIN CARY	Ashtabula Till		Ashtabula morainic system (end moraines)	Till (silt)	Strongly constructional; knob and kettle topography; numerous undrained depressions	
				Ashtabula moraine under thin beach sands			
		Hiram Till		Deñance end moraine	Till (silty clay to clay)	Undulating; locally constructional; scattered undrained depressions; very weak at places	
				ground moraine	Till (silty clay)	Flat to gently undulating; local poorly drained areas	
		Lavery Till		Lavery end moraine	Till (silt)	Somewhat undulating; locally constructional; undrained areas rare	
				ground moraine	Till (silt)	Level to gently undulating	
		Kent Till		Kent end moraine	Till (sandy loam)	Strongly constructional; knob and kettle topography; numerous undrained depressions	
				Findley Lake recessional moraine	Till (loam)		
				Clymer recessional moraine	Till (loam)		
					ground moraine	Till (loam becoming sandy loam toward the east and south-east)	Smooth to gently undulating; undrained areas very rare
	ILLINOIAN	Inner phase		ground (?) moraine	Thin, discontinuous, weathered till blanket	Erosional; similar to non-glaciated area, but less "rugged"; rare slightly constructional patches	
		Outer phase		ground moraine (?)	Rare patches of thin weathered till over bedrock; scattered erratics	Erosional; similar to non-glaciated area, but slightly less "rugged"	
	ILLINOIAN OR WISCONSIN	Undifferentiated members of units above		kames, kame terraces, kame moraines, and eskers	Sand and gravel	Distinctly constructional except in Illinoian areas. Knobby; commonly in the form of ridges, terraces, or isolated mounds; kame moraines intimately mixed with end moraines	
		Undifferentiated members of units above		outwash (valley trains), river terraces, lake deposits including beaches of former high levels of Lake Erie	Bedded sand, silt, and clay; sand and gravel	Generally smooth to gently undulating; commonly nearly level or gently sloping downstream	
		Undifferentiated		stream alluvium and bedrock			

NOTE — The symbols above are normally prefixed by the letter "Q" for Quaternary. The letter has been omitted since all units having symbols are of Quaternary age. Glaciofluvial deposits outside the glacial border are only partially mapped.

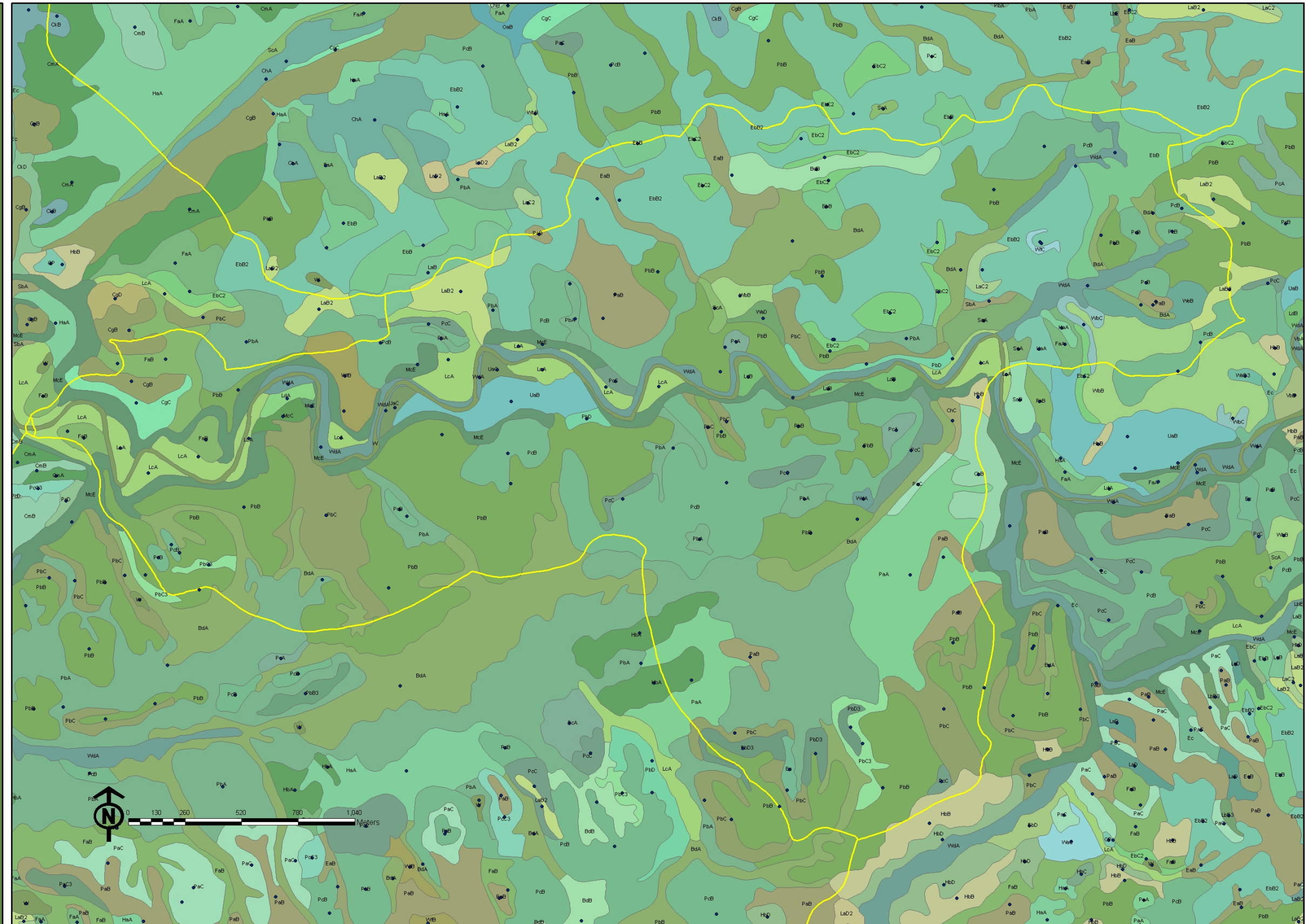
Sub-Watershed Soils Map 1



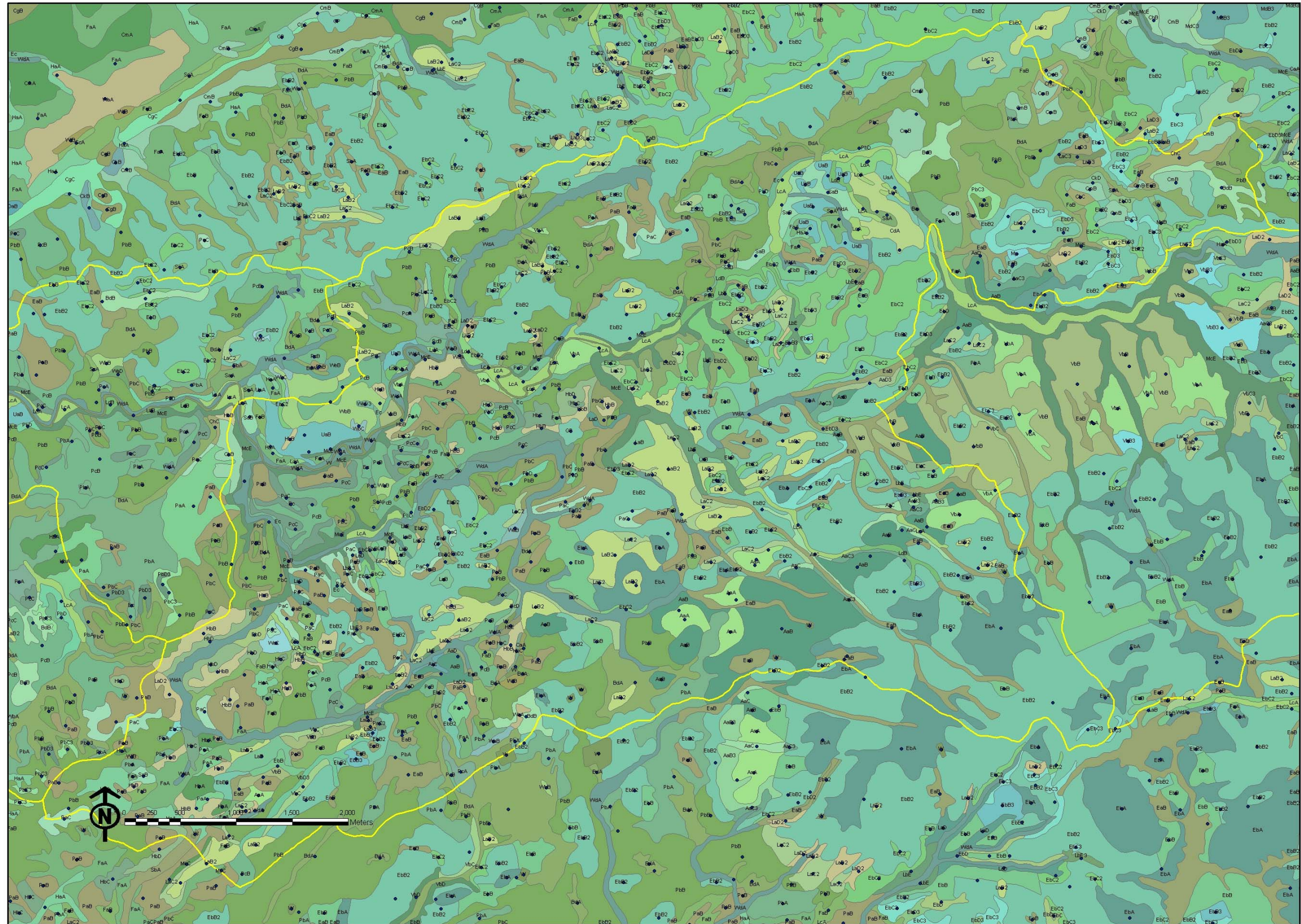
Sub-Watershed Soils Map 2



Sub-Watershed Soils Map 3



Sub-Watershed Soils Map 4



Sub-Watershed Soils Map 5

