

The development (depositional) history of New Brunswick peatlands*D. Keys**Three-D GeoConsultants Limited, Fredericton, N.B. E3A 5G9*

A comprehensive evaluation of peat and numerous localities. In the Sackville area peatland resources has recently been carried out by the New Brunswick Department of Natural Resources. The data compiled by this inventory program was used to delineate regional variation in the peatlands. By grouping peatlands with similar stratigraphy, seven regions were recognized. Factors such as climate, post-glacial sea level fluctuations, surface morphology and drainage, vegetation, and bedrock geology were evaluated in the interpretation of the development history in each of the seven regions.

Raised (or domed) ombrotrophic peatlands are the most common type in the province. On the Carboniferous Platform development of these peatlands commonly began in shallow depressions, often on the divide between river systems. Along the east coast the peatlands developed over marine sediments on emergent coastal plains. The coastal climate probably contributed to the rapid development of peat layers which exceed 8 m in thickness. Coastal submergence and the resulting erosion of the peatlands has produced 4 m high peat cliffs at

peatlands have also developed over marine sediments with 2-3 m deep ombrotrophic bogs surrounded by shallow marshes. Interbedded clay and silt layers are common in basal peat layers. Along the Bay of Fundy coast small, topographically confined, ombrotrophic bogs have developed in bedrock depressions following coastal emergence. The relatively few peatlands which occur in the northwest of the province are generally thin ombrotrophic bogs which originated near small brooks or by forest paludification.

In the southwest of the province peatlands developed in association with slow-moving streams or by in-filling of lakes. Basal ooze or marl layers are common. While most of the accumulated peat layers are of minerotrophic origin, thin ombrotrophic layers can be found on the surface of many deposits. Extensive swamps and marshes associated with the Saint John and Oromocto Rivers have variable peat depths. Interbedded silt and clay bands and high ash contents have resulted from periodic flooding.