cal responses producing slumping in the Fredericton Brook Member. Below the 50–100 m scale, slumping is related to the high water content and high organic matter content of the sediments, which would have had a very low angle of repose and low plasticity limit. Repeated collapse of the sediment pile down a very shallow gradient would have been the norm. Collapse at scales larger than 50–100 m seems to be consistently associated with listric structures that root into the lower part of the Albert Formation and do not extend up section higher than the upper Hiram Brook Member. These features involve substantial thicknesses of Albert Formation (the largest may involve the entire thickness), and represent collapse of more coherent bodies of sediment by rotational slumping. The sediment pile involved in these collapse events may have been substantially dewatered, with loading of the Frederick Brook Member by the overlying Hiram Brook Member sands being the driving mechanism.

Unstable at any scale: slumps, debris flows, and landslides during the deposition of the Albert Formation, Tournaisian, southern New Brunswick

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The early Carboniferous (Tournaisian) Albert Formation in southeastern New Brunswick consists of a thick succession of lacustrine sedimentary rocks, sub-divided into a middle shale-dominated Frederick Brook Member between upper and lower sand-dominated units, the Hiram Brook and Dawson Settlement members, respectively. Slump-structures and debris flow deposits are found throughout the succession, but are especially common in the Frederick Brook member. Of the slump folds there has been considerable debate as to whether they are all soft-sediment structures. Some of them involve tens of metres of section and contain cleavages, and a consistent feature of many of these structures is the integrity of layering: features more characteristic of 'tectonic' structures.

Slumped intervals range in scale from a few centimetres to thicknesses in excess of 50–100 m, the maximum scale seen in outcrop. Seismic profiles suggest listric slumps on a larger scale - possibly involving more than half a kilometre of section. Road cuts along Highway 2 near Norton have been analyzed to determine the thickness of slumped intervals and their frequency, between the centimetre scale and 50–100 m. The size-frequency of slumped intervals between the centimetre scale and 50–100 m show a log-linear relationship with a distinctive fractal dimension, larger scale features follow a distinctly different log-linear relationship. This implies two distinct mechani-

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