

**Large slump structures in the Macumber Formation, Basal Windsor Group,  
Ingonish area, northeastern Cape Breton**

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The Macumber Formation outcrops as an almost horizontal sheet for 1100 m along the coast of Bear Cove, Victoria County. The formation consists of two lithologic zones, in upward succession: (1) carbonaceous, vuggy, black limestone (0.5 m); and (2) thinly to very thinly stratified, vuggy, peloidal dolomudstone (up to 18 m). This second zone has laterally extensive, internally folded sheets arranged in stratigraphic sequence. Individual sheets intercalate either with undisturbed strata or with other deformed sheets. Folds in underlying sheets are unaffected by those in overlying sheets; the facing direction of folds differs between deformed sheets. The folds are tongue or tear-drop shaped, recumbent, isoclinal antiforms ranging in size from metres to several decametres. They form toe-like bodies with vertical separation surfaces; that is, synforms are absent. In plan sections,

folds are fan shaped, with hinges curved through 180 degrees. Vergence varies: smaller folds face mainly east, larger ones are variable. The folding rotates lensoid vugs up to 20 cm in diameter. Smaller vugs only millimetres in diameter give a foamy appearance to volumes of the dolomudstone; other areas are a micro-breccia; macro-brecciation is absent, as is cleavage.

The fold forms are syndepositional slump structures. Bacterial SO<sub>2</sub> reduction of organic matter in the basal carbonaceous limestone generated gas bubbles into wet mudstone of layer 2. Hydrodynamic shock probably due to earthquakes from boundary faults increased pore-fluid pressure. Liquefaction of the thixotropic carbonate ooze caused flowage across an essentially flat basin floor.