
**Resource potential of the Maritimes Basin,
New Brunswick, Canada**

N.J. ATKINSON, J.C. POL, AND A.O. SLAUGHTER
*Southwestern Energy, 2350 N. Sam Houston Pkwy E.,
Houston, Texas 77302, USA*

The Maritimes Basin is a Carboniferous-age basin in Eastern Canada. Although much of the basin lies offshore in the Gulf of St. Lawrence, the largest onshore extent of the basin lies in New Brunswick and Nova Scotia. The Maritimes Basin formed as a series of pull-apart basins related to strike-slip movement along major fault systems similar to the modern-day San Andreas fault system of California. This event post-dated the continental accretion resulting from the closing of Early Paleozoic ocean basins and predated a final accretion event in the Permian. This final event resulted in compression and creation of folds and faults in the Maritimes Basin.

Existing oil and gas production from the Moncton Subbasin and numerous oil and gas shows across the region indicate the existence of a viable hydrocarbon system. Depth-to-basement interpretations made from magnetic data have identified a series of previously unknown sub-basins covering more than two million acres in central New Brunswick. Additional magnetics, airborne gravity, geochemical, and seismic surveys will be conducted to confirm the presence and extent of these subbasins.

The known source rock in the area is the Carboniferous Frederick Brook shale member of the Albert Formation. This rich oil-prone source rock was deposited in a lacustrine setting and can be up to 330 m thick and contain up to 20% total organic carbon. Although elevated maturity levels suggest natural gas will predominate at depth, liquids may be preserved on the shallower margins of the basin. Secondary targets are the Hiram Brook member sandstone beds. These sandstones may develop into conventional, structurally and/or stratigraphically trapped reservoirs. Evaporite beds of the Windsor Group form regional seals to the Hiram Brook sandstone, although uplift during the Permian caused the erosion or non-deposition of these beds in local areas.