

Maritimes Basin studies: GSC Atlantic

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The GSC Atlantic is conducting a comprehensive study of the origin, evolution, basin fill and petroleum prospectivity of the Maritimes Basin, onshore and offshore Gulf of St. Lawrence. Building on several decades of regionally based geological and geophysical mapping and syntheses, the project has three scientific and one reporting thrusts.

1. **Basin Framework Studies** — Regional crustal scale seismic refraction studies, together with mapping and interpretation of potential fields data, provide the essential geological context within which the geodynamic and thermal subsidence, and infill history of the basin can be considered.

2. **Stratigraphic Studies** — New biostratigraphic data, and a reappraisal of the lithostratigraphic framework have resulted in significant changes to perceptions of the stratigraphic character of the basins and regional correlations. One key element of the stratigraphic definitions has been the number of unconformities of regional significance which in turn may directly influence the distribution of source rocks and reservoirs in the deep basin.

3. **Petroleum System Studies** — The crustal and stratigraphic studies are an essential underpinning to considerations of the petroleum systems operating in the Basin

which in turn influences the basin petroleum prospectivity. Regional and site-specific studies of Late Devonian to Permian strata of the western Maritimes Basin provide evidence that all the geological prerequisites that influence the generation, expulsion, and migration of petroleum have been satisfied but that significant geological risks remain. Source, reservoir and trap/structuration studies are being conducted to

assess the nature and degree of these risks.

4. Maritimes Basin Geoscience Compilation — A key component of the project is to ensure that elements of the data, information and knowledge generated through the project are made widely available through the use of web-enabling technologies.