

Overview of seismic reflection results from the western Maritimes Basin

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Recent seismic reflection work in the western part of the Maritimes Basin has focused on the onshore basins. These onshore studies allow a direct comparison with offshore structure and stratigraphy, using an extensive seismic reflection data base consisting of more than 45,000 line km of data.

Seismic horizons were mapped in the Moncton, Cumberland, Antigonish-Mabou, and Magdalen basins. Up to eight seismic horizons were mapped in the Cumberland Basin, whereas only three to four horizons were mapped in the other basins. The base of the Windsor Group was a key

seismic horizon mapped in all of the above noted basins. An upper Windsor Group horizon was mapped in all basins, but correlation with lithological control suggests this horizon may correspond to different stratigraphic levels of the Windsor Group in different basins. A base Horton Group horizon was mapped in the Moncton and Magdalen basins, and a base of the Boss Point Formation was mapped in the Cumberland Basin. This seismic stratigraphic framework provided the basis for onshore-offshore stratigraphic correlation.

Onshore tectonic elements which were identified offshore include the Westmorland Uplift, Sackville Subbasin, Hastings Uplift, and the Scotsburn Anticline. Major faults which were traced from the onshore area into the Gulf of St. Lawrence, include the Belleisle, the Rockland Brook and the Hollow faults. The transition between the numerous structural basins onshore and the one large basin offshore, can be mapped and studied using the seismic data. In general, the western Maritimes Basin is asymmetric, with a deformed southern margin and a gently tapering northern margin.