

## Broad Terrane Features of the Early Mesozoic Fundy and Grand Manan Basins, New Brunswick and Maine

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The Grand Manan Basin off-shore from easternmost Maine is separated from the much larger Fundy Basin by the White Head Horst, an area of mainly submerged metamorphic basement that includes the eastern part of the island of Grand Manan and its archipelago of smaller islands, and islands of The Wolves to the north. The Red Point Fault on Grand Manan is the eastern border fault of the Grand Manan Basin, with an estimated 3 km of vertical offset. The western 2/3 of the island is within the basin and mostly covered by the Grand Manan Basalt, an exact equivalent to the end-Triassic North Mountain Basalt of Nova Scotia and Fundy Basin. The western fault border of this small basin is interpreted to be along the Murr Escarpment, a linear and steep bathymetric slope parallel with and close to the coast of Maine. The northern end of the White Head Horst separates the Murr Escarpment Fault from the Headlands Fault along southern New Brunswick, which forms the submerged western border for the Fundy Basin. Unlike in most rift basins of eastern North America, border fault movements have left Grand Manan Basin strata relatively horizontal, at least in outcrops exposed on the island.

Seismic sections in the Fundy Basin show Mesozoic strata to be tilted down to the west against the Headlands fault, but both strata and basalt maintain relatively constant thicknesses and so appear to be truncated by the border faulting. Outcrops of basal Triassic sandstone are found in several areas along coastal New Brunswick west of the Fundy Basin. On Grand Manan, the Red Point Fault also cuts the basalt in its shoreline exposure, and so only post-Triassic tectonic activity is indicated. Across this region the most obvious model is that Early Mesozoic sediments and lava flows were also deposited to the west of the basins in both New Brunswick and Maine, and border faulting and uplift in Jurassic or later times led to the present-day map patterns. If giant dikes along the coastal and inland areas were volcanic fissures for the basalts, the lavas may have flowed even farther outside of the modern basins.