

North Atlantic Ocean basin.

Sediments of the Orpheus Graben include the Late Triassic Eurydice Formation and presumed Late Triassic Chedabucto Formation. The Eurydice Formation is poorly defined and limited to offshore well penetrations. It is comprised of cyclic red shale with subordinate siltstone and sandstone, interpreted to represent coastal and tidally influenced deposition under arid conditions. The Chedabucto Formation consists of red siltstone and sandstone, with minor conglomerate, interpreted as alluvial and fluvial deposits. The Chedabucto Formation, outcropping along the western edge of the Orpheus Graben, may represent an up-dip equivalent of the Eurydice Formation. The lithofacies, cyclicity, and presumed age of both the Chedabucto and Eurydice formations are similar to that of the Wolfville Formation in the Fundy-Minas Basin. The location of all basin fill proximal to the CCF suggests a continuous belt of tectonically related sedimentation patterns from the Fundy Basin to the Orpheus Graben in the Late Triassic, a concept known as the “Broad Terrane Hypothesis”.

The separated basins can be interpreted as fragments of a larger transtensional basin system formed through synchronous movement of the CCF. Later Mesozoic basin inversion and erosion may have caused the separation of the Fundy Basin and Orpheus Graben.

**The Orpheus Graben Triassic Eurydice and Chedabucto formations and their relationship to the Fundy Basin
Wolfville Formation**

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The Orpheus Graben is a fault-bounded basin plunging east from Chedabucto Bay to the Laurentian Channel. The graben shares a tectonic link with the Fundy Basin through oblique-slip movement of the Cobequid-Chedabucto Fault (CCF) during Middle to Late Triassic development of the